

# AVCOM'S satellite receivers continue to make me look good.

## My customers get studio-quality satellite reception. And, I get all the credit.

Because AVCOM receivers live up to their performance specifications and have such high reliability, you benefit from the resulting customer satisfaction.

Ask any AVCOM dealer about AVCOM'S excellent reputation for products that work right from the carton. The first time. Every time.

Compare AVCOM'S video quality to the competition. It's unsurpassed. Carefully designed commercial-grade circuitry makes the AVCOM picture possible.

AVCOM. It means Value. Reliability. And, Service. As an AVCOM dealer it means AVCOM'S commitment to your success.

## AVCOM Lets you profit from both the commercial and the home-use markets.

AVCOM is a leading designer and manufacturer of unique satellite communications products for both commercial and private installations. For example:



**COM-66T**: A commercial receiver that features a detented channel selector and is compatible with AVCOM'S BDC-60 block downconverter. The result is a double conversion system that offers high stability and can be used with any brand and degree LNA. Other



features include; automatic polarity switching output, tunable audio, sensitive signal meter and rack mount.



**COM-2A:** The ultimate in Convenience, Economy and Performance. Attractive styling fits any home decor. Ideally suited for low cost installations and delivers maximum reliability and high performance. Features include;

- Attractive styling
- Tunable audio with switchable wide and narrow IF filters (optional)
- Remote control console
- Internal crystal controlled modulator
- Unclamped video output for decoders



COM-3R: Now with APS-24 Auto-Polarization Selector standard. The full feature COM-3R is used around the world for a wide variety of unique TVRO installations. Threshold peaking and selectable dual IF filters are optionally available for receiving international type transmissions.

Call your AVCOM representative today. It's a sure way to continue looking good.

## **AVCOM®**

500 Research Road. Richmond, VA 23236 (804)794-2500 Toll Free Order-Only Line 800-446-2500

## TOP OF THE MONTH

AS 1984 winds down and we begin the chore of looking back at how we changed as an industry in this George Orwell year, we invite dealers to help us analyze the 'profits' and 'debits' of our 5th complete year. On page 13 here we have another one of those infamous CSD surveys. The results will be published in a special issue of CSD/2 for January 15th. Your own inputs will be melded together with those from hundreds of other dealers; the result being we have a good profile of the year just past and the year just starting. Please help.

LUXOR. Not their best year. Coop travels to Sweden to inspect the Luxor facility and to talk with top management and engineering to determine how this innovative company can come back in 1985. Or, if they will. In this issue.

YAP. Our CSD/2 mid-month has been looking at the planning behind the Young Astronaut Program, announced by President Reagan late in October. In Coop's Comments this month some additional insight while the details of the program itself will continue in CSD/2 for December 15th.

HBO 'vs' M/A-Com. It 'dominated' aisle-talk at Dallas during the STTI show and got some 'official' discussion as well. CSD/2 for November 15th reported the first fall-out; Coop looks at 'level two' in his 'Comments' section as well, this month.

## **DECEMBER 1984**

COOP'S COMMENTS .....page LUXOR/ After The Fall Out.....page 8



	-
YEAR END/ Dealer Survey	page 13
PIONEER David Brough	page 19
ROOTS OF TVRO/ Part 15	page 23
ARTHUR 'C' MEETS THE POPE	page 30
MAKING MOLNIYA 'FRIENDLY'/ Wes Thomas	page 36
SMATV DESIGN/ BDC Low Cost Planning	
(Part Two)	page 40
LOW-COST QUICK MOUNT/Vince Kelly, Videosat	page 51
TRANSPONDER WATCH	page 57
CORRESPONDENCE	page 60

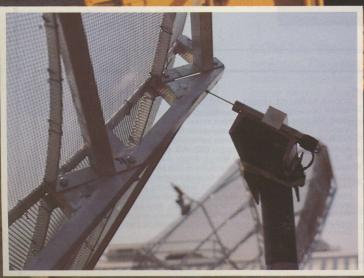


OUR COVER/ Lindy Yngvesson is 'Managing Director' for Luxor Electronics in Motala, Sweden; parent firm for Luxor North America. Coop inspected the Swedish firm's plant late in October and reports on how their unique 'European style' of marketing and dealer support is shaping their sales approach to 4 GHz receivers in North America (page 8, this issue).

## COOP'S SATELLITE DIGEST

COOP'S SATELLITE DIGEST published monthly by West Indies Video, Ltd., a Turks & Caicos Corporation with corporate offices located at Grace Bay, Providenciales, Turks and Caicos Islands (West Indies). US offices for processing of subscriptions, advertising, and news material maintained at Ft. Lauderdale, Florida. ALL MAIL, including advertising queries, subscription requests, news materials and correspondence should be addressed to CSD, P.O. Box 100858, Ft. Lauderdale, Fl. 33310. CSD office hours are Monday-Friday 9 AM to 4 PM eastern time; telephone 305/771-0505. CSD, now entering its sixth year of service to the TVRO industry, is AlRmailed worldwide on the 1st of each month; our companion CSD/2 is issued on the 15th of each month. issued on the 15th of each month, AlRmail, worldwide for a total of 24 issues per year. Subscription rates are \$75 per year in US, \$85 per year (US funds) in Canada and Mexico and \$100 per year (US funds) elsewhere. West Indies Video, Ltd. is a 'Pioneer/Dealer Class Member' of SPACE, the international trade association for the TVRO industry. CSD is copyrighted 1984 © by Robert B., Susan T., Tasha A. and Kevin P. Cooper





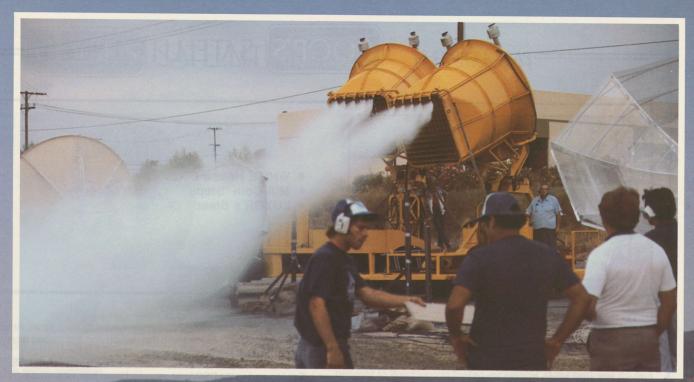
## © Copyright 1983 Paradigm Mfg Inc.

## URRICAN

Your new antenna is all set up, adjusted, fine tuned and the service technician is on his way back to the shop. Now the real test begins. Will it continue to perform? For how long will it maintain the picture quality it has today? Your antenna will have to face the wind and weather every hour of every day of its life. This will be its toughest test. To survive, you'll need equipment strong enough to

test. To survive, you'll need equipment strong enough to take whatever nature can throw at it. You'll need Paraclipse.

It is impossible to gather conclusive data about the effects of storm generated stress on an antenna unless you can control the storm. We wanted to put our equipment through an intense, concentrated weather test to measure its





## HIGH PERFORMANCE SATELLITE TELEVISION SYSTEM

performance, so we hired a "professional hurricane" to see if we could break a Paraclipse.

We dumped 337 gallons of water per minute into a 95 mph windstream to create the wind load equivalent of a 140 mph storm. Each antenna was tested at five different elevation settings and was blasted from eight different angles.

settings and was blasted from eight different angles.

After several hours of abuse, both Paraclipse antennas emerged undamaged and in perfect shape. Off-air satellite signal evaluation at the end of the tests, indicated the Paraclipse antennas maintained the same electrical parameters as prior to the tests. After testing, measurements show no warping or distortion of the welded aluminum truss structure or mount assembly. Both antennas, in spite of loads to which they were subjected, maintained parabolic symmetry and accuracy. Neither antenna suffered any damage; not one piece of mesh was bent or one clip lost. Both antennas were absolutely stock items assembled according to standard instructions.

The welded aluminum Rib & Ring Truss System pioneered by Paraclipse is still the lightest, strongest, most accurate design available. The concentric ring trusses, to which the heavy expanded aluminum mesh is fastened, form a perfect compound parabolic shape that even a hurricane can't bend. The all steel polar mount and base are powder coated to further seal and protect them from the elements.

A Paraclipse system has the structural strength and dimensional stability to maintain the integrity of its parabolic shape under the worst of conditions. Paraclipse materials are chosen for their lightweight strength and corrosion resistant properties. Every aspect of the Paraclipse design represents strength in performance.

Paraclipse, strong, lightweight, weatherproof, shippable, easily assembled with simple hand tools, an affordable quality antenna from a very reputable manufacturer.

Dollar for dollar, you just can't buy more performance.

Paradigm Manufacturing, Inc. 3711 Meadowview Drive

Redding, California 96002 (916) 244-9300 (916) 365-9131

## COOP'S SATELLITE COMMENT

- WHITE House Ceremony
- M/A-Com 'Steps On' HBO 'Integrity'
- LUXOR's Steady Course

#### **DATELINE** Washington

I have been to the White House previously. Officially. As an invited guest of the President (although not the current President). I enjoyed it, sat in on a couple of conferences designed to determine White House position on the (then) rapidly emerging cable television technology, and went home to write about it.

This time was different. It all started with a telephone call from Intersat's David McClaskey. They were preparing a customized 11 foot dish for a special Presidential White House Ceremony; would I like to 'tag along' when the dish was set-up and the President did his thing? Foolish question.

Al Bishop is a key member of the Intersat team. His background is NASA, and he had a very real voice in the Apollo program years ago. Al was in charge of creating the dish, coordinating the intricate White House security and political advisor team that was going to oversee the dish and its use, and making everyone happy. Al is a miracle worker, as we shall see.

**Gene Cernan** is a former Astronaut. I would not handle it as well as Gene does. What possible new thrill can a man look forward to after having walked on the surface of the moon (Apollo 17)? Gene is also a part of the Intersat team and he serves on their Board of Directors. He is very active in business throughout Aerospace/Electronics and headquarters in Houston as much of the SPACE business these days does.

Bishop arrived first. With the 11 foot dish. His task was to get it set up on the lawn adjacent to The White House so it would serve as a backdrop for **President Ronald Wilson Reagan** during the ceremony. Al's job was delicate. First there are the Presidential advisors; that cadre of people who have the best interests of the President at heart, and their own self preservation in mind, at all times. Not necessarily in that order. Then there is the Secret Service; a loyal crew if ever there was a loyal crew. They also have the President's best interests at heart; and **his** self-preservation comes **ahead** of their own. Finally there is a team of special assistants who have their own turfs to defend and a pecking order which they must adhere to or run the risk of losing their own place in that pecking order. Permanently.

Bishop knew what **he** wanted, for Intersat. He wanted the 11 foot dish, customized with the official 'patch' of the Young Astronaut Program, positioned squarely behind the President. It was to sit in such a position that every network TV camera had to look it straight in the 'feed' and every press camera had to use it as a backdrop for the flurry of photos that would be shot in the brief 20 minute ceremony.

The advisors had their own ideas about where the dish should go. Their concensus was that it should sit a considerable distance from the President, far out of sight of the TV and still cameras. The **special assistants** had their concept of where the dish should go; they opted to have it just off 'the stage,' positioned so that a TV camera could 'pan' to it but not where it would backdrop or frame the President. The **Secret Service** guys had their ideas as well; they were faced with a crowd of perhaps 300 people, most of them simply visitors, and many not having been subjected to the usual long and tedious background and security checking which is an unfortunate part of any occasion where the President is going to appear in public. Of the three 'factions' Bishop found the most support in the Secret Service corps. And well he might since his NASA friendships formed more than a decade ago

included the head of the White House Secret Service detail. At least he could 'talk' man-to-man with this person and that helped pave the way for Bishop's position.

Ultimately Bishop would prevail, with the support of the Secret Service, and as the CSD front cover for November 1st portrayed, there was President Ronald Reagan standing squarely in front of an 11 foot (Intersat) TVRO dish making his remarks and welcoming the world to the Young Astronaut Program. I am told that the appearance, on the dish feed, of the 'Intersat' logo was something of a coup; that it was 'highly unusual' for any corporate name to appear on a 'product' within the grounds of The White House. In his hurry to get the dish completed for the ceremony, Bishop can be faulted for 'neglecting' to have a 'special feed' prepared that did **not have** the Intersat logo so prominently displayed. He promises it won't happen again.

Cernan, McClaskey and I started the morning of October 17th by going to the National Air and Space Museum for a press conference. The special Assistant to The President for 'Private Initiative,' Jim Coyne, was holding a press conference in the basement of the museum to introduce the backers of the Young Astronaut Program (YAP). Upstairs we ran into perhaps a dozen groups of youngsters being escorted through the museum. I pondered why there were so many television camera crews in the place, and why these crews seemed to be 'tagging along' with the kids. I'd figure it all out later in the day.

Coyne, as reported in our CSD/2 for November 15th, is in charge of the YAP (project). He had a considerable number of high power people at the press conference and I smiled as I looked over the network and other correspondents on hand and realized that I was the only 'trade publication' guy in the place. I asked a question in the Q and



JIM COYNE, heading up the President's White House Office of Private Sector initiatives introduced the Young Astronaut Program during morning press briefing.

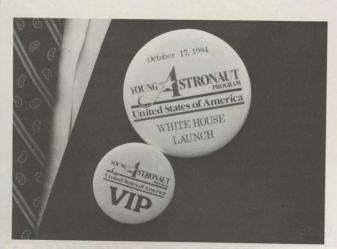


WENDELL BUTLER is Executive Director of the Young Astronaut Council, the 'governing body' that amounts to a Board of Directors for the entire operation.

A session and established my presence. I also sent McClaskey to the rear of the room to 'con' a TV camera guy out of a videotape dub of what he was shooting there. It would be good stuff for our own industry archives one day.

Jack Anderson thought up the Young Astronaut Program. I applauded him for his mind-set (and do again here) but only wish he had come up with a different name since I cringe everytime I hear the acronym 'YAP.' The only Yap I know is an island in the Pacific, or the repeated utterances of a testy dog. I wish it had come out differently because it is not exactly a 'class word.' I fear we are stuck with it. Jack Anderson, for those who live in a shell, is a famous (some would say the-most-famous) correspondent in Washington. His specialty is digging up things people would prefer to have buried. He has embarrassed just about every President for three decades with his revelations and I have never known him to be anything other than 'neutral.' I was a little surprised, no amazed, to see him taking this 'leadership position' in the Young Astronaut Program. That indicated to me that the program was about as non-political as a program could be, headquartered in Washington.

The press conference came off well, there were good questions from the reporters including one who pondered why President Reagan was selecting 'now' to announce it. The reporter voiced the suspicion that the entire program was being 'timed for release for the elections.' I thought Anderson handled that very well when the quills stood up on his back as he responded.



SOUVENIR BADGES were passports to the 'inner sanctums' of The White House.



CERNAN and some kids. Standing before a mural that used his walk on the moon as a model, Gene chats with some school kids brought to Washington for the ceremony, at the National Air and Space Museum. TV cameras rolled constantly.

I figured we had a couple of hours 'to kill' between the press gathering and the event; scheduled for 1:30 PM on the White House Lawn. That was when I became a Gene Cernan fan club member.

The minute we hit the upstairs floor of the Space Museum the kids began clamoring around the man from Apollo 17. "Would you kids like to meet a real Astronaut?" asked Jim Coyne of a group that was being led through the displays. That began two hours of Cernan talking with group after group of kids, and being videotaped talking with each group. I finally figured out what the kids and the TV cameras

President Reagan had invited children from numerous school districts (from as far away as San Diego) to attend the day's events. Groups of 10 or so had traveled to Washington and with them had come their local TV station crews. The kids were seeing the Museum in the morning and sitting up front in the afternoon to participate with the President. Group after group was introduced to Gene, asked him questions as the TV cameras rolled, and walked away smiling because they had met 'the man on the moon.' A good show. Jack Anderson took all of this in and asked Gene "What kind of project would it be to have you on the road, visiting school districts all over the USA, speaking at school assemblies and to school science teachers to carry the message of the Young Astronaut Program?" Gene was gracious but firm. He didn't see how he could sandwich a national tour into his already hectic schedule. I suspect he will relent for 'special circumstances' and we'll see him appearing at 'YAP' events nationwide over the next year.

When we finally arrived at the White House (McClaskey, Cernan and I), we were late. We had been instructed to marshall in Jim Coyne's office and I had been promised an 'exclusive interview' with Coyne. We missed it and when we did arrive the place was teeming with a crowd of 50 plus who made up the influential people who had lent their personal name or their corporate names to the Young Astronaut Program. I met, in bewildering succession, the publisher for National Geographic, a VP for Westinghouse, a VP for Pepsi Cola, a high level group at Commodore Computers, television news and feature dignitary Hugh Downs and a long list of other who don't usually have to open their own doors when they are in public.

I spied McClaskey handing out his business card as if his arm was attached to a conveyor belt. I later chided him for it and then felt badly about bringing it up when I saw several of those people he was handing the cards out to come back and get his promise that he would call them about installing dishes for them 'tomorrow' or 'next week.' What I thought was McClaskey-the-salesman at work turned out to be McClaskey-defending-himself; when people learned who he was and what his company did, he was barraged by not-common



The Raydx antenna is unique

The ribs and rim are precision formed of aluminum extrusions providing exceptional accuracy structural integrity. Bronze bushings, stainless steel hardware and a cast aluminum mount assure years of trouble free satellite entertainment

Attractive, blends well with the home setting, excellent performance, easy installation.

What more could you want?

Install a Raydx Raydish antenna, Today







"We pay attention to Quality"



SATELLITE SYSTEMS, LTD.

9 Oak Drive • Silver Springs Shores Industrial Park P.O. Box 4078 • Ocala, Florida 32678-4078 • (904) 687-2003

## ... And See Everything Clearly.

## Unique Because Of Its...

- Clean, Uncluttered Appearance
- 10½ Foot Diameter
- High Gain & Low Side Lobe Levels
- Cast Aluminum Polar Mount
- All Aluminum & Stainless Steel Construction
- No Sharp Edges

- U.P.S. Shippability in 2 Boxes
- Fast & Easy Assembly
- Heat Treated Aluminum
   Ribs & Rim for Stronger
   Than Steel Strength
- Grooves To Hold Mesh Securely
- Available in Colors
- Double Curvature Mesh
- Accuracy
- Deep .3 f/d Ratio Dish

## DON'T BE CONFUSED BY LOOK ALIKES. INSIST ON THE ORIGINAL

Raydx antennas may be obtained from: Arizona: Westek Distributing/Digital Satellite, 2401 W. Behrend, Suite 11, Phoenix, AZ, 85027, 602-582-5955, National Watts: 1-800-821-1989 Ext. 319; Arkansas: Digital Satellite, 7123 Interstate 30, Suite 14, Little Rock Corp. Center, Little Rock, AR, 72209, 501-565-8443; International Video Communications Corp., 4005 Landski, North Little Rock, AR, 72118, 501-771-2800, National Watts: 1-800-643-5427; California: Digital Satellite, 3190 E. Foothill Blvd., Pasadena, CA, 91107, 213-681-6222; Echosphere West, 5671 Warehouse Way, Sacramento, CA, 95826, 916-381-5084, In CA Watts: 1-800-338-5478, Western Zone Watts: 1-800-338-5477, Colorado: Echosphere Corp., 1925 W. Darmouth Avenue, Englewood, CO, 80110, 303-761-4782, Central Zone Watts: 1-800-521-9282; National Microtech West, Inc., 510 29 1/2 Road, Grand Junction, CO, 81504, 303-243-4433, 1800-321-2417; Florida: National Satellite Communications, 1079 Satellite Blvd., Orlando, FL, 32821, Out of FL Watts: 1-800-322-4044, FL: 305-851-47238, FL Watts: 1-800-821-8659; Precision Satellite, Inc., 715 Grove Street, Clearwater, FL, 33515, Watts: 1-800-HOT-DISH, FL 1-813-441-9438; Satellite Concepts of Central Florida, Inc., 1801 N. Florida Avenue, Lakeland, FL, 33801, 813-680-1918; Idaho: Recreational Sports & Imports (R.S.I.), 2436 N. Woodruff, Idaho Falls, ID, 83401, 208-523-5271; Iowa: Digital Satellite, 1601 N. 4th Street, Fairfield, IA, 516-5472-7062; Spectrum Satellite, 3205 Sunnyside Avenue, Burlington, IA, 52601, 1-319-753-31-76, IA Watts: 1-800-532-544; Kansas: Digital Satellite, 2355 S. Edwards, Wichita, KS, 67213, 316-942-3131; Louisiana: Satellite, Specialists, 414 Columbia Street, Bogalusa, LA, 70427, 504-735-9915; Michigan: S. R. Systems, 12266 U.S. Route 27, DeWitt, MI, 48820, 517-669-2465; New York: Digital Satellite, 1600-832-3538; Ohio: Cartwright Communications, 7812 Red Sky Drive, Marks: 1-800-543-8614, OH Watts: 1-800-543-8241, National Watts: 1-800-543-8614, OH Watts: 1-800-543-8046; S. P. Systems, 145 Columbia St



## LUXOR/ CAN THEY COME BACK?



LUXOR AB, the Swedish firm that produces and imports 4 GHz TVRO receivers to the North American marketplace is an 'unusual corporate animal' by North American standards. Perhaps few of the top executives at American TVRO manufacturing firms would feel 'at home' working for Luxor, in Sweden. And there is more of a barrier here than the 'language' or customs.

LUXOR is a 'European' sounding name; a word that happened quite by accident way back in 1923. Corporate history is muddled on the subject but the name Luxor apparently had its origins in 'ancient Egypt.' The firm's name was chosen when the founder, a 'tinkerer' who liked to build early radio sets, needed to give his products an identity. He liked the 'sound' of the word and it stuck. Nearly sixty years later 'his Luxor' would be occupying a million square feet of production space and employing 3,000 people. It was probably not the type of company the founder had in mind back in 1923.

LUXOR is located in Motala, Sweden; a small Swedish town (approximately 30,000 people) in the central and southern portion of the country. LUXOR is a major employer in Motala and a prominent name in the three or four countries which generally work together as 'Scandinavia.' The Swedish countryside surrounding Motala is rolling and the town is situated on a sizeable lake. The trees are tall and for at least a portion of the year the air is clear and the countryside green. Motala has a place in European broadcasting history; years ago, in the same era when Luxor was being formed, a national 'long-wave' broadcasting transmitter operated by the Swedish government was situated here. European radio listeners for some 50 years would hear the announcer say "This is Stockholm/Motala," denoting that the broadcast originated in Stockholm but that the powerful long-wave transmitter was in the distant town of Motala. Large (500 foot) self-supporting towers, once the anchors for the Swedish radio broadcast antennas, are still intact in Motala although the facility has been revamped for many other purposes.

LUXOR was the first, or one of the very first manufacturers in 'Scandinavia' for radio sets. In the years that followed they expanded into speakers (they still produce an extensive line of speakers), television receivers, automobile electronics (for Volvo and Saab), energy control systems, satellite receivers and most recently, carrier current communication systems plus computers. From 'the outside' they look like most any other 'world-regional' manufacturer of consumer electronics

But LUXOR management has several crosses to bear which the typical management teams at competitive manufacturers do not bear. For example:

 Luxor grew so fast, especially during the television explosion, that one day it had 3,000 employees. And no profits. That caused a 'crisis' which resulted in 50% of the work force being let go over a period of time.

"Releasing an established worker is difficult in Sweden, because of our labor laws." Speaking is Lindy Yngvesson. Lindy would be 'President' or 'Chief Executive Officer' (CEO) in a comparable North American company. In Sweden, as is the fashion in most of Europe, he is called 'Managing Director.' He goes on to explain that in



LUXOR'S ONE MILLION square feet grew-up sort of by itself without a master plan. Rear building at right houses six TVRO antennas used for testing and research at both C and Ku bands.

'releasing' an employee, it can require six months or more of 'negotiations' between the company, the employee, and, 'the state.' Most often before the company can dismiss the employee, the company must arrange for the re-training of the employee. If that includes moving the employee (at company expense) to another section of Sweden, so be it. Management, then, has a considerably more restricted hand in 1984 Sweden when it comes to 'employee relations.'

2) Following the crisis, 100% of Luxor became owned by 'the state.' That made everyone an employee of 'the state.' That has changed, again, recently as a Finnish electronics firm (Salora) has acquired (from 'the state') some 70% of Luxor (for a reported \$170M US).

"A Luxor action is not dissimilar from an action of 'the state'" it is noted. And there is a 'caution here' which every member of Luxor must observe when dealing both within the Scandinavian marketplace, and outside of that sub-region of the world.

3) Luxor has always had the potential to be an exporter and most 'states' like the idea that products made in their domain can be shipped elsewhere to bring back to their area foreign currencies. Foreign exchange is a vital part of international relations and a firm that manufactures products which can contribute to the 'importation of (desirable) foreign currencies' is to be 'encouraged'

Some world currencies are more desireable than others. U.S. dollars, for example, have greater value than say Indian Rupees. To Sweden, the exporting of products, to the U.S., is therefore of some 'national' importance.

Luxor today maintains a viable if not terribly aggressive marketing program overseas. They have registered their corporate name in 130 countries and operates fulltime offices in the U.K. and elsewhere. Their consumer products, television receivers, are shipped from Motala to places such as Sri Lanka, Italy, Egypt, the European Common Market countries and sold heavily in Scandinavia. Luxor has around 40% of the Scandinavian marketplace for television sets but you have to keep in mind that Sweden, their home base, has only 8,000,000 people so the market is not huge by American standards.

Luxor does not export anything to North America except satellite receivers. We'll see why, shortly.

Luxor's Lindy Yngvesson (he was named after 'Lucky Lindy,' the American aviator) rose to his present position from the R and D area of the firm. After the '1979 Crisis' period, there was plenty of interest in turning the company around. The key to doing that, it was felt, was to innovate with new designs and concepts. And so, where perhaps other firms with 'financial problems' might opt to shift to a 'financial manager' in the top spot, Luxor would ultimately opt for an 'engineering man' in the top spot. And that tells you something about the direction, and dedication of the company. ie., the firm has been built upon the ideals of 'superb consumer electronics at a fair price' and if the company was to survive 'The Crisis,' it would be because the firm

## OP'S SATELLITE DIGEST PAGE 9/CSD/12-84



COMPUTER MONITORS roll off the line at a rapid rate adding to the \$1.5B SK annual sales rate for 1984.

re-established those original ideals

### **LUXOR'S Broad Base**

Perhaps, in retrospect, 'The Crisis' of 1979 came along at the best possible time. The firm had been increasing sales by about 15% per year through the late 60's and 70's. So too had costs been rising, at about 15% (or a tad more) per year. The company was growing, but standing still (or losing ground slowly) financially. The cash reserves did not exist to sustain any new projects and it was in 1978 that Luxor decided to make a run at the Scandinavian home and small business computer world. The need was there: Scandinavian businesses needed computers and more than they needed computers, they needed computer software created for their needs. And that meant software that had been adapted to the Scandinavian 'language base' as well as the peculiar business techniques employed there. Luxor started off with a bang, grabbing 60% of the marketplace. Apple was number two. Now, some six years hence, Luxor's share of the small computer market has slid to 40% but they are battling recent entry giants such as IBM (35% in 1984).

But the basic business, the segment of their production which 'paid the freight' for all other operations and which formed the basic 'network' for everything they did, was centered still around television receivers; and other consumer electronics including video equipment, radios, hi-fi sets, and speakers. There had been a slow, gradual, but persistent decline in their share of the consumer electronics market in Scandinavia for many years. They needed to halt, and reverse that trend. And with the Swedish Government taking an 'active' role in the ownership and operation of the company, there had to be a fresh look at exporting Swedish created product in exchange for foreign currencies

New subsidiary (sales) firms would be established in the UK, Austria and most recently Luxor (North America) Corp. These would augment Luxor owned subsidiaries in Finland, Denmark, and Norway; the balance of the 'Scandinavian' marketplace. The new, 'lean and mean' Luxor would emerge with an entirely new approach to both product design and export marketing. And by 1984, there would be a few surprises as well. Hitachi, for example; a Japanese firm.

Hitachi wanted to get into the European consumer (TV set) marketplace. But Hitachi was not ready to invest into specialized tooling or receiver designs for European television systems. In particular, the stand-alone French SECAM system was something of an irritant to Hitachi which wanted to try to market in France but where SECAM stood out as the only standard not otherwise widely utilized in Europe. So Hitachi did what any multi-national company could be expected to do; they went to Luxor and signed a contract that has Luxor building Hitachi-brand television sets. For sale in France.

Luxor's Bo Lindqvist smiles as he details the Hitachi agreement. "We of course have great respect for the Japanese electronics manufacturers. But there they are, on the production line; Hitachi branded television sets rolling down the aisleways headed for



HITACHI ALA LUXOR/ television sets built for European (French) marketplace bear famous Japanese maker branding.

France and the rest of Europe. And inside those Hitachi boxes are not Hitachi designed television receiver chassis but rather Luxor designed chassis. They found our receiver design 'quite acceptable'

Luxor fortunes are largely paced by the flow of television sets through the plant. And upwards of 30,000 TV sets per month do leave the Motala facility headed for the marketing and distribution channels.

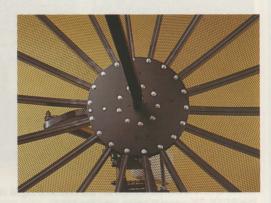


AUTOMATIC PARTS INSERTION/ more than 90% of all of the parts to be installed on this circuit board are put in place in about 45 seconds time by this machine. That's hard to beat, even with Far-Eastern labor rates!

# Finally. It's Here. The BR Antenna! Designed by TVRO Engineers, It's Superbly Crafted, Advanced and Even Ships U.P.S.!

ou really won't believe your eyes—or your stopwatch. This is the brilliant new BR mesh antenna. It could be the best 10 foot antenna available today. And it assembles in a mere 90 minutes. Yes, 90 minutes What's

minutes. Yes, 90 minutes. What's more, it's U.P.S. shippable, in just two boxes, as compared to similar



which contributes to its increased stability. And it's got a cast aluminum mount, not fabricated iron, like some. It's even got bronze bushings at the pivot points, and stainless steel hardware.

All of which helps make this antenna thoroughly weatherproof, reliable and accurate.

The monopole feed support is machined into the central hub, making a nice solid union and remarkably stable focal point. And with an impressive F to D ratio of .3, it's a high performance deep dish.

All in all, BR is proud to put our name on this outstanding antenna.

mesh antennas costing a great deal more to ship. Nope, with the BR mesh antenna, there's no more bulky, costly shipping.

But that's not all. It's a masterpiece of construction. It's made of the finest tempered aluminum,

The LNA Cover. Everybody Talks About the Weather, But We've Done Something About It.

The BR LNA cover keeps the temperature of the LNA stable, thus insuring more consistent per formance. And since it cuts down on condensation, you're less likely to have moisture problems. It's a good way to prevent call-back!

"The BR
Ultimate One
Year Warranty."
BR is the only distributor in the industry who will warranty any product you purchase from us for a full year. Call BR toll free for details.

National 1-800-421-0148



1-800-832-6660 NY State Outside NYC & LI

"We Distribute Trust"

35 Lumber Rd., Roslyn, NY 11576 **516-484-6080 (NYC & LI)** Hours: Mon-Fri 9:30-5:30 Sat 10:00-3:00 E.S.T.

## BR and KLM: Partners in Innovative Leadership. The KLM Receivers: The Sky Eye X, The Sky Eye VIII and The SSD.

sk anyone in the industry about the KLM name. They'll tell you about the famous KLM quality—a quality which has never been compromised. KLM has been an industry pioneer from the start—it was KLM, for instance, who invented the single conversion image reject downconverter. These are three of their most popular receivers.

extremely reliable, it's an unusually attractive unit. It's got built in Polarotor I interface and fully adjustable skew. It features an AFC switch, center tune indicator, and slide rule tuning. It's also got LED metering.

also got scan and seek capabilities, polarity reversal, format switches,



stereo processor output and audio video output. Add to that a built-in 3-4 modulator and video invert switch, and you have one of the most versatile, advanced units available today.

tunable audio, a

KLM SSD

signal strength metering, digital transponder displays and single tunable audio. With the Sky Eye VIII, you're guaranteed consistent picture quality for years to come.

#### THE SKY EYE X.

The Sky Eye X represents the latest achievement in 10 generations of superb KLM receivers. It combines the best of American technological innovation with Japanese manufacturing excellence.

#### THE SKY EYE VIII.

The Sky Eye VIII is known for its absolute rock solid stability. It's a remote control receiver with quartz synthesized tuning. That's what keeps it from drifting. It's

#### THE SSD.

The SSD is the non-remote version of the Sky Eye X with many of the same terrific features. It has detent tune, skew control, polarity reversal, and single tunable audio. It, too, is quartz synthesized. which gives it that absolutely stable picture

quality.



The Sky Eye X is manufactured in Japan by the Pioneer Corporation. It's not only



"The BR Ultimate One Year Warranty." BR is the only distributor in this industry who will warranty any product you purchase from us for a full year. Call BR toll free for details.

National 1-800-421-0148

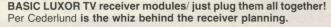


-800-832-6660 NY State Outside NYC & LI

## "We Distribute Trust"

35 Lumber Rd., Roslyn, NY 11576 516-484-6080 (NYC & LI) Hours: Mon-Fri 9:30-5:30 Sat 10:00-3:00 E.S.T.





The firm has grown, since 'The Crisis' of 1979, to a forecast level of \$1.5B SK in corporate year of 1984. A Swedish Crown (SK) exchanges at about 12.5 cents in the fall of 1984 so there are roughly 8 of them to the US dollar. That means they have a goal of \$187.5M (US) in 1984 and that may help you 'grade' the size of the Luxor operation.

The television receiver system is perhaps the most advanced in the world today; as a consumer friendly, world-standards-friendly product. People like Per Cederlund and Bo Lindqvist had set out with Lindy Yngvesson's shadowing to create a television chassis system which lends itself to use virtually anyplace in the world. There is a single main chassis which does the sort of things which all television sets have to do, no matter where they are used; the TV signal, reduced to an 'IF' is amplified and filtered, detected and sound and video are amplified and made ready to 'display.' This main circuit board is pretty much the same no matter where the receiver will end up. Ahead of the receiver there is a varactor type tuner which is selected based upon the incoming terrestrial TV frequency range being employed. And after the demodulator there are video de-emphasis and audio circuits which shape the detected video and audio to match the particular television standards in use where the receiver is sold. The entire receiver is built around the adaptability to the now famous Luxor 'hand held' remote control.

The current family of television receivers is very closely aligned to the product we all know and best understand from Luxor; the satellite television product line. **The original TVRO package** was designed and ready to roll, as an 'engineering department project,' when the 1979 'problem' hit. At that, it would have pre-dated the first US products in this field save for the fact that it was a 11/12 GHz receiver, not a 4 GHz receiver.

Luxor held the view, then as now, that ultimately the television viewing consumer would not care or be concerned about how the television programming reached the screen. He would look upon satellite as simply another channel or channels and the fascination that we all hold dear, for television from space, would pass quickly at the consumer level.

So as the post-crisis television receivers were being designed, the engineers at Luxor kept in mind their developed and operational 11/12 GHz satellite 'front-ends.' To them, the TVRO hardware was simply another 'tuner' to go ahead of the master circuit board which made up the 'heart' of the Luxor brand television sets. And as the current master chassis circuit boards evolved, there was an ongoing concern that **any receiver** going into the field, then or thereafter, be capable of being field-retrofitted with a 4, 11 or 12 GHz 'head' so that when the consumer was ready, he or she could add the satellite channels to the basic television receiver with a relatively short in-home field visit from the dealer who sold the TV set originally.

This may be the only such television receiver chassis in the world today.

In their display room in Motala, you see off-the-line and off-the-



WHILE MOST boards are now 'stuffed' with automatic insertion equipment, some parts (such as power transformers) must still be hand mounted. Extensive assembly line has strange 'appearance' since all girls on line wear static-reducing arm supports to protect delicate parts.

shelf Luxor television receivers with the 11/12 or 4 GHz 'heads' functioning. The 'heads' are actually the downconverters which still go



AUTOMATIC PARTS VERIFICATION/ Each circuit board goes on a jig where a computer checks every part for its value. Any parts out of tolerance are flagged and replaced before the board is tested for operational characteristics. Imagine checking 200 parts in three seconds time!



DEALER TRAINING is essential; "I think!". Stig Karlsson is responsible for conducting dealer training and staging seminars worldwide. But he has never been to the USA. We ought to be able to figure something out . . .

at the TVRO antenna. The IF signals are routed through their appropriate interconnecting coaxial cables to the TV-receiversegment which has been dedicated to recovering sound and picture from the microwave video signals. The indoor, inside of TV receiver portion of the (TVRO) system installs in a planned for segment of the TV receiver; sliding into a dedicated 'slot' where it interfaces for powering and input/output connections.

In this way the hand held remote the customer has opted for with their television set becomes a controller for the satellite 'portion' or 'segment' of the receiver system in addition to the normal terrestrial functions. At the most basic consumer level, the satellite channel(s) are simply another key-entry on the hand held remote and the customer gives absolutely no thought to where the pictures come from or how they get on the screen.

Luxor does not export television receivers to North America; yet. We think we should re-state that here since there are bound to be dealers who think this is a pretty nifty way to do things.

By 'sharing' common circuits (powering, control, video and audio), there are dollar savings to the producer and lower total dollar costs to the consumer. In effect, every television receiver now being shipped by Luxor (including, one suspects, the 'Hitachi' sets as well) are 'satellite compatible.' Luxor makes a great deal of this in their own promotional literature in Europe and every Luxor television set leaving



OFF TO AMERICA/ Bo Lindqvist inspects one of several SAS containers being loaded with Luxor TVRO receivers bound for Chicago.

the factory proclaims in large letters 'Satellite Television.'

All of this has been accomplished within Europe inspite of the fact that there is virtually no satellite television system market, nor consumer level service, now available in Europe. Luxor could be accused of over-marketing the satellite phrase were it not for the fact that the receivers are, indeed, ready for satellite TV if and when it does become available.

## **THE Service Connection**

Luxor (North America) Corporation's Hans Giner has been telling us, quietly, as an industry that our present 'helter-skelter' approach to dealer back-up and customer servicing is 'not the way we do things in Europe.' When Luxor went through a difficult period in the United States earlier this year (during the 'breakup' with STS as their importing distributor), much was made of their 'European approach' to dealer education and service back-up. So in particular we were interested in how Luxor handled their service and warranty and dealer training and backup programs in Europe. If we found some indication that they 'did things differently' and indeed 'better' in Europe in supporting their dealers, with the established TV sets and computers and the like, perhaps there was something here which would ultimately have a bearing on the American TVRO marketplace.

Was there?

We'll see in the conclusion of this series in CSD for January 1st.

1984 YEAR END **DEALER SURVEY** 

END OF YEAR/ Or Era?

There are numerous signs all about the TVRO industry that the year just now passing may turn out to be more than the end of a 'single year'; these signs suggest to many that an 'end to the pioneering-era'

is upon us.

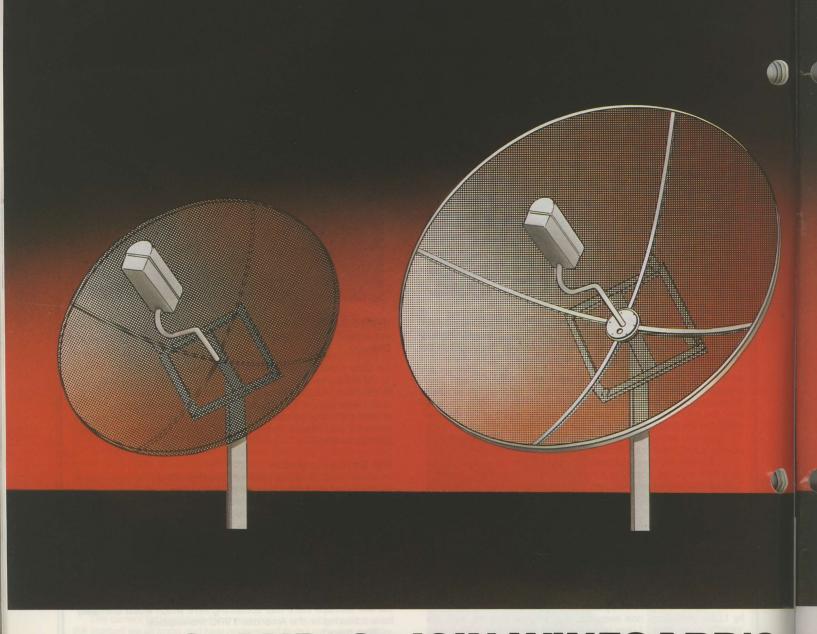
TVRO has moved rapidly from a toy of electronic tinkerers to a billion-dollar per year consumer electronics industry. Not all of the original 'participants' are still with us and the number of firms who started up business during years one and two who are still 'intact' is getting smaller all of the time.

So what is happening? Is TVRO leaving 'the garage' behind for all time? Is the trend to offshore production now so strong that American control of the technology and production is but a memory? How will this on-rush of offshore technology impact on the retail level

CSD plus CSD/2 has launched an extensive year-end study of the 'State-Of-Our-Industry.' The results of that study will be published in a special 'expanded issue' of CSD/2 dated January 15. We invite you. as a dealer, to participate in the data base now being collected for summary in CSD/2 for January 15th.

Data bases can only be created from data-input. To this end CSD and CSD/2 have distributed hundreds of survey forms directly to OEMs, distributors, and dealers. At the recent Dallas STTI Show, CSD conducted nearly 50 'in-depth' personal interviews with dealers

> DEALER SURVEY FORMS/ pages 16, 18 DEALER Text/ continues on page 19



## A"6"AND"8"JOIN WINEGARD'S



## NEW! WINEGARD RECEIVER W/INFRARED REMOTE AND BUILT-IN ANTENNA POSITIONER!

Unlike most other units on the market, the Winegard receiver has a built-in power supply for the antenna positioner, eliminating an extra unsightly box on your customer's TV set. With our wireless, hand-held infrared remote, your customers can select channels up and down and control the antenna positioner from the comfort of their armchairs. Many other features, too, including automatic switching between satellite and regular TV signals through a built-in bypass switch. Check it out.

# Choose from Winegard's new trio of perforated deep dishes

You have one customer who demands studio-quality pictures on all 100-plus satellite TV channels, and another customer who might be satisfied with fewer channels but wants his dish on the roof. How do you satisfy both with one size dish? You can't!

That's where Winegard's full line of "see-thru" aluminum antennas comes into your profit picture. Instead of trying to suit everyone with one dish, Winegard is offering three DIFFERENT sizes to give your customers a custom fit.



## **FANTASTIC** "10"

Joining Winegard's popular 10-foot dish are two new sizes our 6- and 8-foot models. All three deliver exceptional pictures for their respective sizes - at an affordable price. Unlike solid metal or fiberglass dishes our perforated aluminum antennas are lightweight and easy to handle. The 10-foot weighs 92 pounds, the 8-foot weighs 48 pounds, and the 6-foot weighs just 17 pounds. The exclusive Winegard construction provides for simple installation. They go together quicker than any other dishes in the industry! And, our 6-foot roof mount allows you to install the 6-foot dish on just about any roof - easy as installing a conventional outdoor TV antenna.

With Winegard's line of quality satellite TV antennas you can offer your customers features like:

- Smoked chrome protective finish
- 125 mph wind survival rate
- Deep-dish design with F/D ratio 0.283 on all three dishes
- Patent Pending construction



As Advertised in PLAYBOY, SPORTS ILLUSTRATED, and PEOPLE.

## WRITE OR CALL FOR DETAILED LITERATURE:

Winegard Company 3000 Kirkwood St., Burlington, IA 52601 (319) 753-0121





# **CSD DECEMBER 1984 'End Of-An-Era' DEALER SURVEY**

WN/0	CITY STATE _	ZIP	
LCO	YEARS S	SELLING TVRO	
A Tr Tr Tr A A A Tr Tr A	as:  ne best year for me to date in dollar volume.  The best year to date for net profit.  NOT the best year to date in net profit.  year of tremendous retail-level pricing pressures.  A year of moderate pricing pressures.  A year of no pricing pressures.  Year of GREAT confusion for equipment selection.  A year of moderate confusion for equipment selection.  A year of LESS confusion for equipment selection,  Ne year when small (7 foot and down) TVRO dish systems 'took off.  A year when smaller dishes still are not important.  Ne year when system prices dropped dramatically.  A year when system prices dropped modestly.  A year when system prices increased (at retail level).  Ne year when I began handling 'Off-Shore' produced receivers.  A year where I CONTINUED to handle 'Off-Shore' produced receivers year where I had MORE TROUBLE in dealing with distributors.  A year where I had LESS TROUBLE dealing with distributors.	ceivers. seivers.	
_ A	A year where I had about the SAME TROUBLE dealing with distinction.  A year where I had about the SAME TROUBLE dealing with distinction.  year where I got 'STUCK' for \$ by an OEM/distributor.  A year where I didn't get stuck for losses by an OEM/distributor year where I noticed a definite 'upward trend' in people coming to row A year where I found people are no better informed on TVRO the	stributors. or. my store already knowledgeable about TV	RO.
_ A _ A _ 84 SI	A year where I had about the <b>SAME TROUBLE</b> dealing with <b>dist</b> year where I got 'STUCK' for \$ by an OEM/distributor A year where I <b>didn't get stuck</b> for losses by an OEM/distributor year where I noticed a definite ' <b>upward trend</b> ' in people coming to r A year where I found people are <b>no better informed</b> on TVRO the <b>PECIFICS:</b>	stributors. or, my store <b>already knowledgeable</b> about TV than in the past.	
_ A _ A _ 84 SI	A year where I had about the <b>SAME TROUBLE</b> dealing with <b>dist</b> year where I got 'STUCK' for \$ by an OEM/distributor A year where I <b>didn't get stuck</b> for losses by an OEM/distributor year where I noticed a definite ' <b>upward trend</b> ' in people coming to r A year where I found people are <b>no better informed</b> on TVRO the <b>PECIFICS:</b>	stributors. or, my store <b>already knowledgeable</b> about TV than in the past.	
A A B4 SI In 1! A)	A year where I had about the SAME TROUBLE dealing with dist year where I got 'STUCK' for \$ by an OEM/distributor A year where I didn't get stuck for losses by an OEM/distributor year where I noticed a definite 'upward trend' in people coming to r A year where I found people are no better informed on TVRO to the people study of the people as I end the year, my TVRO dealership:  Is averaging systems per month retail at an averaging systems per month systems	or, my store already knowledgeable about TV than in the past.	
A A B4 Si In 1! A) B)	A year where I had about the SAME TROUBLE dealing with dist year where I got 'STUCK' for \$ by an OEM/distributor.  A year where I didn't get stuck for losses by an OEM/distributor year where I noticed a definite 'upward trend' in people coming to r A year where I found people are no better informed on TVRO to the second of the year, my TVRO dealership:  Is averaging systems per month retail at an averaging systems priced between \$ and \$ Is Is Not offering 'install-it-yourself' packaged systems to	r. my store already knowledgeable about TV than in the past.  verage price of \$  (installed).	
A A B4 Si In 1! A) B)	A year where I had about the SAME TROUBLE dealing with dist year where I got 'STUCK' for \$ by an OEM/distributor.  A year where I didn't get stuck for losses by an OEM/distributor year where I noticed a definite 'upward trend' in people coming to reach a year where I found people are no better informed on TVRO to the secon	r. my store already knowledgeable about TV than in the past.  verage price of \$  (installed).	
A A B4 Si In 1! A) B)	A year where I had about the SAME TROUBLE dealing with dist year where I got 'STUCK' for \$ by an OEM/distributor.  A year where I didn't get stuck for losses by an OEM/distributor year where I noticed a definite 'upward trend' in people coming to r A year where I found people are no better informed on TVRO to A year where I found people are no better informed on TVRO to Systems I end the year, my TVRO dealership:  Is averaging systems per month retail at an averaging systems priced between \$ and \$ Is Is Not offering 'install-it-yourself' packaged systems to with a foot dish.  Is handling (brand name and model #):	r. my store already knowledgeable about TV than in the past.  verage price of \$  (installed).  to the retail trade starting at \$	(low end
A A SI In 1! A) B) C)	A year where I had about the SAME TROUBLE dealing with dist year where I got 'STUCK' for \$ by an OEM/distributor.  A year where I didn't get stuck for losses by an OEM/distributor year where I noticed a definite 'upward trend' in people coming to r. A year where I found people are no better informed on TVRO to the PECIFICS:  984, as I end the year, my TVRO dealership:  Is averaging systems per month retail at an avector is selling systems priced between \$ and \$ is selling systems priced between \$ and \$ is is Not offering 'install-it-yourself' packaged systems to with a foot dish.  Is handling (brand name and model #):  1) Receivers:	r. my store already knowledgeable about TV than in the past.  verage price of \$  (installed).  to the retail trade starting at \$	(low end
A A SI In 1! A) B) C)	A year where I had about the SAME TROUBLE dealing with dist year where I got 'STUCK' for \$ by an OEM/distributor.  A year where I didn't get stuck for losses by an OEM/distributor year where I noticed a definite 'upward trend' in people coming to r A year where I found people are no better informed on TVRO to the pecifics:  984, as I end the year, my TVRO dealership:  Is averaging systems per month retail at an averaging systems per month retail at an averaging systems priced between \$ and \$ Is Is Not offering 'install-it-yourself' packaged systems to with a foot dish.  Is handling (brand name and model #):  1) Receivers: 2) LNAs: LNAs:	r. my store already knowledgeable about TV than in the past.  verage price of \$  (installed).  to the retail trade starting at \$	(low end
A A SI In 1! A) B) C)	A year where I had about the SAME TROUBLE dealing with dist year where I got 'STUCK' for \$ by an OEM/distributor.  A year where I didn't get stuck for losses by an OEM/distributor year where I noticed a definite 'upward trend' in people coming to rack A year where I found people are no better informed on TVRO to the PECIFICS:  984, as I end the year, my TVRO dealership:  Is averaging systems per month retail at an averaging systems per month retail at an averaging systems priced between \$ and \$ Is Is Not offering 'install-it-yourself' packaged systems to with a foot dish.  Is handling (brand name and model #):  1) Receivers: 2) LNAs: 3) Antennas: 3	r. my store already knowledgeable about TV than in the past.  verage price of \$  (installed).  to the retail trade starting at \$	(low enc
A A Si In 19 A) B) C) D)	A year where I had about the SAME TROUBLE dealing with dist year where I got 'STUCK' for \$ by an OEM/distributor.  A year where I didn't get stuck for losses by an OEM/distributor year where I noticed a definite 'upward trend' in people coming to r A year where I found people are no better informed on TVRO to the pecific set of the year, my TVRO dealership:  Is averaging	r. my store already knowledgeable about TV than in the past.  verage price of \$  (installed).  to the retail trade starting at \$	(low end
A A SI In 1! A) B) C)	A year where I had about the SAME TROUBLE dealing with dist year where I got 'STUCK' for \$ by an OEM/distributor A year where I didn't get stuck for losses by an OEM/distributor year where I noticed a definite 'upward trend' in people coming to r A year where I found people are no better informed on TVRO to the pecific set of the year, my TVRO dealership:  Is averaging systems per month retail at an averaging systems per month retail at an averaging systems priced between \$ and \$ Is Is Not offering 'install-it-yourself' packaged systems to with a foot dish.  Is handling (brand name and model #):  1) Receivers: 2) LNAs: 3) Antennas: 4) Motor Drives/Actuators: Lis 1s	r. my store already knowledgeable about TV than in the past.  verage price of \$ (installed).  to the retail trade starting at \$	(low end
A A Si In 19 A) B) C) D)	A year where I had about the SAME TROUBLE dealing with dist year where I got 'STUCK' for \$ by an OEM/distributor A year where I didn't get stuck for losses by an OEM/distributor year where I noticed a definite 'upward trend' in people coming to r A year where I found people are no better informed on TVRO to the pecific set of the year, my TVRO dealership:  Is averaging systems per month retail at an averaging systems per month retail at an averaging systems priced between \$ and \$ Is Is Not offering 'install-it-yourself' packaged systems to with a foot dish.  Is handling (brand name and model #):  1) Receivers: 2) LNAs: 3) Antennas: 4) Motor Drives/Actuators: Lis 1s	r. my store already knowledgeable about TV than in the past.  verage price of \$ (installed).  to the retail trade starting at \$	(low end
A A Si In 19 A) B) C) D)	A year where I had about the SAME TROUBLE dealing with dist year where I got 'STUCK' for \$ by an OEM/distributor A year where I didn't get stuck for losses by an OEM/distributor year where I noticed a definite 'upward trend' in people coming to r A year where I found people are no better informed on TVRO to the second of the second	r. my store already knowledgeable about TV than in the past.  verage price of \$ (installed).  to the retail trade starting at \$	(low end

## **ECHOSPHERE PUTS THE PIECES TOGETHER**NOW WITH FOUR LOCATIONS TO SERVE YOU BETTER



Normal delivery nationwide only 48 hours.



5671 WAREHOUSE WAY SACRAMENTO, CA 95826 (916) 381-5084 To order call:

800-338-5477 (WESTERN ZONE) 800-338-5478 (IN-STATE CA)



1925 W. DARTMOUTH AVE ENGLEWOOD, CO 80110 (303) 761-4782 To order call:

To order call: 800-521-9282 (CENTRAL ZONE & CANADA) 800-521-9282 (IN-STATE CO)

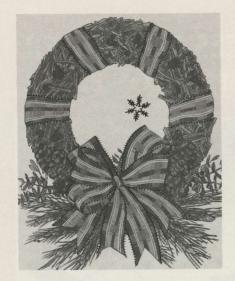


3901 LA REUNION PARKWAY, BLDG. 15 DALLAS, TX 75212 (214) 630-8625 To order call:

800-521-9282 (S.W.ZONE) 800-521-9282 (IN-STATE TX)



10536 LEXINGTON DR. KNOXVILLE, TN 37922 (615) 966-4114 To order call: 800-223-1507 (EASTERN ZONE), 800-421-9935 (IN STATE TN )



## ECHOSPHERE PUTS THE

ERA SURVEY/ continued from page 16

1984 TRENDS:	
During 1984, I saw (answers up, same, down):	
A) Pricing from my sources (direction of movement) go	
B) Pricing from my competitors (direction of movement) go	
C) Interest in SMATV systems (direction of movement) go	
D) Support from my suppliers (direction of movement) go	
E) Equipment reliability (direction of movement) go	
F) Warranty Repair 'cycling' (direction of movement) go	
G) My support of SPACE (direction of movement) go	
H) Zoning problems, my area, (direction of movement) go	
1985/ What You Would Like To See:	
During 1985, my dealership would be better if (yes or no):	
A) The industry launched a 'public awareness program' aimed at consumers.	
B) The industry consolidated on two trade shows per year.	
C) I got more training from my distributor.	
D) I got more training from the OEMs.	
E) I had distributors calling ON me rather than calling on telephone.	
F) There were more helpful industry TV programs sent to me via satellite.	
G) More industry suppliers advertised 'TVRO concepts' to consumers.	
1985/ What I Expect To Do:	
A) I expect my business to be % (bigger) (smaller) in 1985.	
B) I expect to enlarge stay same with my retail floor space in 1985.	
C) I expect to open new outlets stay same in 1985.	
D) I expect to add new personnel stay same in 1985.	
E) I expect to keep same equipment lines replace some equipment lines	
F) I expect BDC units to be same sales percentage smaller sales percentage _	larger sales percentage in 1985.
Soap Box Comments:	
CUAP SAME	

#### **INSTRUCTIONS:**

Return these forms to CSD SURVEY, P.O. Box 100858, Fort Lauderdale, Fl. 33310 postmarked by December 20th to insure your comments are included in January 15, 1985 CSD/2 'Profile Of An Industry.' And HAPPY HOLIDAYS from CSD!

and distributors. Now to add the final bit of data required, we ask that you spend a few minutes of your time completing the two page 'DEALER YEAR END SURVEY' form(s) here. Please remove these two pages from CSD, or office-machine-copy (as in Xerox ) these two pages and return them to CSD prior to December 20 (1984).

There is no contest with this survey form; we believe you will 'profit' from the careful analysis of the many raw data inputs we will be utilizing when you receive your January 15th issue of CSD/2 in the mail. We look forward to your support in this vital 'study'!

## PIONEER'S PIONEER **DAVID BROUGH**

**PIONEER Brough** 

Just as the first experimental, private TVROs were being constructed in the USA (see CSD for October 1984) another type of pioneering effort was underway in Canada. The fellow behind the effort was David Brough.

Brough had a 'dream.' He was concerned that the handful of Canadians living in the 'far north' were being forgotten in the national, master-plan to distribute entertainment and news via television. He watched with some dismay as the Canadian government wrestled with the logistics and costs associated with providing real-time television to communities of as few as twenty people scattered throughout an area larger than the Unied States, and came to the conclusion that there had to be a better way. Under the original 'ANIK' proposal, communities of 1,000 and up people would eventually have a single channel of 'CBC-North' television, via satellite feed and a local low power TV (re) transmitter. But smaller communities would never have television, based on that plan. And even those communities scheduled to receive 'CBC North' television were missing out on many of the entertainment opportunities possible with 'local' television.

Brough wanted to design a really low-cost system which would solve this problem. His technical background, at the time, was 'thin' but his motivation was high. He started something using videotape.

Brough set up in the Toronto area with a stack of Sony Betamax tape decks. Using off-air VHF and UHF, and Canadian cable feeds, he began creating his own 'broadcast day' mixing sports, entertainment, news and public affairs programming. Because the Betamax machines were self-limited to approximately 2 hours recording time (in that era), he found some help and created a special machine that would ultimately be capable of handling on a reel-to-reel fashion as much as 12 hours of programming on a single tape. He 'mastered' the 12 hour program blocks and then duplicated them.

Throughout northern Canada, above the Arctic Circle and wherever there were small communities, he traveled to promote his 'Northern Access Network.' The people of a community would raise funds, locally, to pay the costs of a 1 to 10 watt VHF transmitter. The system would be set up in a home; many housewives were pressed into service. Brough worked with Canadian CATV and low power designers to create a package of equipment which could be easily transported into small communities in two-seater airplanes. In dozens and dozens of communities David Brough built low power television stations. To feed those stations, he worked around the clock making up tape masters which were bicycled from community to community in small bush airplanes.

It was a 'break-even' business at best. And it was, in the eyes of the Canadian broadcast officials, 'highly illegal.'

Brough had tried to do it 'the right way'; he spent four years



pounding on doors and holding meetings with hundreds of Canadian bureaucrats. He had a single objective; he simply wanted rural Canadian people to have access to television. The bureaucrats liked Brough's concept but disliked his approach. One study group finally decided that Brough's plan was 'do-able' at a cost of \$105,000 per station. Brough had another number in mind; like \$3,500. The Bureaucrats reacted in horror at Brough's equipment approach. Brough reacted in horror at the Bureaucrat's equipment approach. An impasse was reached since at \$105,000 per 'station-system' it would be a very long time before communities of 50 or 100 people would have television.

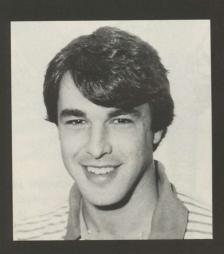
That was when Brough decided to chance federal reprisals and set out to use local fund raising as a means of putting in 'test systems. One of the early test systems went into a mining camp called 'Pickle Lake'; in Ontario. The station Brough installed was operating out of a kitchen and a housewife was in charge. The station proved very successful and had complete local community support. And, CBC North reacted by installing a satellite fed terminal with live programming. They saw Brough as a 'competitive threat' even though their service was non-commercial. Before it was all over, Canadian Mounties would descend upon Pickle Lake to confiscate (thereby shutting down) the Pickle Lake Northern Access Network station. And before THAT was all over, the Mounties would reconsider their hasty action and return the equipment to the town. The massive turn-out of townspeople, armed with axe handles and other threatening 'weapons,' probably played a part in the Mounty decision.

Brough's fame grew, fueled by extensive Canadian press coverage. The CBC, a government corporation, provided Brough with ample radio and television 'forum' time to get his message out across Canada. Ultimately, nearly 50 channels of television would be operational in the Northern Access Network. And Brough would be turning out miles of 1/2" reel-to-reel videotape per day.

Brough discovered satellites early in 1979. Attending the first SPTS industry convention in mid-1979, he decided to begin switching his Northern network stations over from videotape to satellite feeds. But first he had to get the pricing down on TVRO systems since the (1979) price of a TVRO system was far more than the cost of a modified Betamax tape deck. Joining forces first with antenna pioneer

# "THE CONIFER SYSTEM IS TERRIFIC!

# IT HAS THE PICTURE QUALITY I WANT TO PASS ON TO MY CUSTOMERS."



Paul Giberti has been selling Conifer for over a year in the Whitman, Massachusetts, area and is convinced it's the best mesh system available today. Here, in his own words are the reasons why!

## HOW DID YOU BECOME SOLD ON CONIFER?

"I had installed a couple of the Conifer dishes and liked them. Then, I went to a satellite show and saw the rest of their equipment and became completely hooked. The Conifer system is terrific!"

## WHAT DO YOU CONSIDER THE MOST IMPORTANT FEATURE?

"From a dealer's standpoint performance is the most important quality of any satellite system. Conifer's performance is the best of any mesh satellite dish. I compare the Conifer system to competitive systems and customers want to know why Conifer's picture is so much better. As far as I'm concerned Conifer is commercial quality."

## WHAT ABOUT THE APPEARANCE OF THE DISH AND RECEIVER?

"The dish looks nice. You can get it in different colors to blend into the environment. You can locate the receiver just about anywhere into any living environment. The system really fits in."

## HOW ABOUT THE DURABILITY OF THE ANTENNA?

"The survivability of the Conifer dish is way up there on the list of outstanding features. We installed one dish forty feet up in the air that became completely caked with ice during a storm. Icicles were hanging 10-feet below it. Winds were blowing 60 to 70 miles per hour and the dish was completely operational the whole time. Another dish is located 35 feet from the Massachusetts shoreline and is constantly exposed to salt spray. It's been out there for a long time and so far I haven't had any problems. The antenna construction is outstanding and the mount is extremely well-built. It has to be to survive this environment."

## DO YOU HAVE ANY COMMERCIAL APPLICATIONS FOR THE CONIFER DISH?

"Yes. I've put in a Conifer SMATV system and it's working perfectly. The dish performs well in SMATV applications and Conifer has all the equipment I need for a reasonable yet good quality SMATV system."

## WHAT ABOUT CONIFER'S SERVICE?

"Service is probably one of the key advantages I find when I deal with Conifer. Whenever I have a problem or need help they're right on it! All the Conifer people are that way. And, their service and repair turnaround work is great."

## HOW DO YOU SELL THE CONIFER SYSTEM?

"I show my customers a demonstration of the complete Conifer home satellite TV system and ask them to compare it to our competition. They don't always know what a good picture should look like. When they see the competition and then Conifer there's no doubt about it, Conifer always has the best picture."

## WHY DO YOU RECOMMEND CONIFER?

"If any dealer out there needs someone to help them out, Conifer is the answer. I've had nothing but great experiences with Conifer. They'll be here long after many other TVRO suppliers are gone."

Contact Conifer today and ask for their new booklet: 77 Ways
To Succeed in The Home Satellite TV Business.



#### DE-2001 THE COMPLETE DEALER READY-USER FRIENDLY SATELLITE SYSTEM From CONIFER

- Total System Concept Ensures Matched Performance Range Tested Gain: 42 dB  $\pm$  .5 dB at 3.95 GHz Micro-Grid "See-Through" Reflector Blends Into Any Environment Choice of White, Black, Tan and Forest Green Polymer Coating

- 2-Hour Assembly Time
  Rugged High Strength Aircraft Grade Aluminum Alloy Frame
  Receiver Features Include Channel and Audio Tuning, Built-in
  Antenna Positioner, Inverted Video, Scan Tune, and Polarotor I Control.
- Complete System Includes Antenna, Feedhorn, 100K LNA,
- Motorized Polar Mount, Receiver and Cables
- Full 1-Year Warranty
- Model AN1200C Antenna Available Separately.



BLACK

TAN

**GREEN** 

WHITE

Company \_

Phone Number (\_

Fill out this coupon or send your business card and receive Conifer's "77 Ways To Succeed In The Home Satellite TV Business"

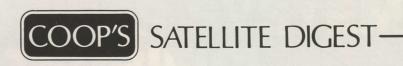
Mail to: Conifer Corp., Box 1025C, Burlington, Iowa 52601

Name

Business Address

\_ State \_\_\_\_

FOR QUICKER RESPONSE, CALL OUR TOLL FREE NUMBER 1-800-358-3058 In Iowa Call (319) 752-3607, in Canada Call 1-800-461-0296 (Ext. 112 in B.C.)



## **GIVE YOUR TVRO STORE**

## ALL SIX OF THE PIONEER LITHO-PRINTS AVAILABLE DATE SIMPLY BY FILLING OUT THIS FORM!

YOUR NAME/Address

Did you view the 'TVRO INDUSTRY FIFTH BIRTHDAY PARTY' telecast on October 18th?

SEND ME at no charge and with no obligation the complete set of SIX Litho-Prints issued to date by Boman

SEND ME ONLY DAVID BROUGH/ I already have the first five prints in this series

Industries and CSD Magazine.

JUST In Time For Christmas (and it's free!)

during the month of December. The people who started our industry, in graphic, collectable Litho-Prints ready for you to frame and display with pride in your TVRO showroom. You will receive Litho-Prints of Robert **Coleman**, Robert **Taggart**, Taylor Here they are; all six of the CSD TVRO Industry "PIONEER'S PIONEER" 11 by 14 Litho-Prints are available to you

Howard, Richard L. Brown, David Barker and this month's new Litho-Print; David Brough.

a story' of some special effort or efforts put forth by a man who dedicated an important segment of his life to making your Industries and CSD Magazine! industry possible. The six prints now available to you, for returning the coupon form below, are without cost; courtesy of Boman These delicately done Litho-Prints show-off your own TVRO technology in a unique and attractive way. Each print tells

# are John Ramsey and Arthur C. Clarke) will be shipped to you without charge from Boman Industries. You are asked to SIMPLE Rules Litho-Prints: complete the survey questions below to qualify for this month's special "Christmas-Pack" of TVRO Industry Pioneer 2) What type of SPECIFIC dealer training do you feel is MOST needed in our industry at the present time? 1) AS A TVRO dealer or participant in the TVRO industry, what type of program guide do you recommend to your All you have to do is complete the form below and your complete set of six Litho-Prints (eight will be issued in all; to come customers?

NAME **ADDRESS** COMPANY TOWN/CITY ZIP COUNTRY

9300 Hall Road **BOMAN INDUSTRIES Birthday Party** Send Form To:

Downey, California

NOTE: Offer expires December 31, 1984

Oliver Swan, and after Swan's death with Swan-student Hayden McCullough, David Brough perfected the creation and ultimately the marketing of the screen-reflector 'spherical' antenna which Oliver Swan had developed. Brough was an early, volume customer for firms such as Sat-Tec because he needed low-cost receivers for his scattered northern terminals.

Brough's activities through all of this period forced the Canadian government to re-assess their own rules and regulations. Their \$105,000 10 watt TV stations were predicated upon those stations meeting certain minimum 'technical requirements' which in turn came from rules adopted in the early 1950s. Brough forced them to find new rules and when they did so, low cost (really low cost) low-power TV systems became legally permissible.

In fact, as a result of Brough the Canadian authorities created an entirely new legal-family of broadcasting operations; stations which could be built, and licensed, by the federal authorities pretty much like the stations Brough had been building himself for nearly half a decade. However, bureaucrats have long memories and when it came time for these new stations to be granted, Brough's firm was repeatedly 'passed over' by the licensing people in favor of newer firms who

offered essentially the same services.

So in the end, Brough pioneered a concept and by his own efforts he created an entirely new form of low power, low-cost television service for Canada. The lessons he taught went 'worldwide' and you will today see examples of Brough-ingenuity in low power TV station operations all over the globe. But, his own fortunes in the 'TV broadcast world' dwindled because in the process of proving and 'forcing' a new technology and system on 'the authorities' he was in effect removed from consideration as an operator of such 'legalized' sys-

Today Brough operates his Commander Satellite Systems in Ontario where he manufactures a line of spun aluminum dish antennas. Brough is a pioneer in our field who had the guts to face down regulations which he found unreasonable, and to risk his own savings and 'freedom' for his belief (on more than one occasion David Brough was 'threatened with jail' if he persisted with his efforts). History will record that Brough was indeed 'right' and that his own vision and efforts made possible first-time television for tens of thousands of viewers worldwide

## ROOTS OF TVRO (Part 15)

About this series: The 'seeds' planted in U.S. television regulation, by the Federal Communications Commission in the late 40's and 50's, created the 'need' for home satellite service in the 1980s. In this series, originally published in CATJ magazine in the 1975 time frame, Coop traced that history to provide a better understanding of the cable television industry growth. Now, nearly ten years later, it re-educates a new generation of 'television entrepreneurs' about their own 'roots.

While this investigation was moving along, Senator Magnuson took another swipe at the FCC's lack of action to provide assistance to the UHF telecasters, who were by 1955 leaving the air faster than new stations could replace the drop-outs. Magnuson told the Commission:

"The Commission has a real and moral responsibility to inform the public as quickly as possible as to what the FCC expects to do about de-intermixture (i.e. separate areas for VHF and UHF). Every day the Commission delays such a pronouncement, large sums of money continue to be invested by the public

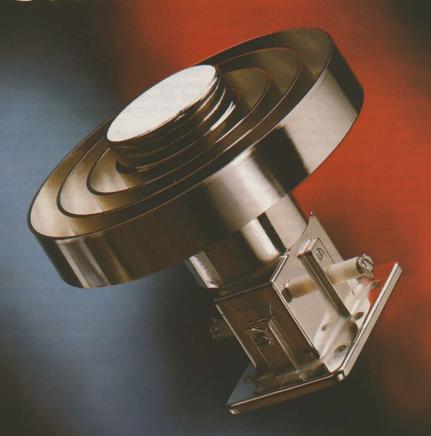
in converting, or purchasing, sets so that UHF signals can be received. Yet, if the experience of the past two years (i.e. substantial numbers of UHF stations leaving the air) is any guide, many of these people may be making a futile expenditure."

When the Senate Commerce Committee became embroiled in the intense on-going study of why the Commission's UHF plan was failing, the Chairman of the Commission, George C. McConnaughey, was testifying before the group. The Chairman was attempting to explain all of the problems the Commission was having when Senator Pastore interrupted him saying:

"These explanations don't suggest you people know what you are really doing. We have got to act fast and get the allocation problem really straightened out, once and for all!"

This was in early 1956. More than one year later, the hearings dragged on, and the FCC was still promising to correct the problem. The "current plan", in the early months of 1957, was to create zones of UHF stations and zones of VHF stations (an early form of de-intermixture). The VHF stations who were being "requested" to move to UHF (so as to create all UHF service in their respective areas) were

# YOUR TVRO SYSTEM IS STATE OF THE ART.



## What about your polarizer?

Only one polarizer offers you the reliability of digital solid state at low cost: M/A-COM Omni Spectra. With no moving parts to freeze up or meltdown – no motors, rotors or gears – the low loss M/A-COM Omni Spectra polarizer offers you top quality reception, whether you're in Anchorage or Anaheim.

Even in the harshest environments, this polarizer is completely phase and insertion loss stable. But that's just the beginning.

Because it's digital solid state, this polarizer never needs adjusting, after installation. It even features



Omni Pulse Decoder Low cost receiver compatible adapter Part # 4850-4004-00



an adjustable scalar feed to acheive maximum gain from every antenna. Satellite skew is automatically compensated for.

In-line design makes the M/A-COM Omni Spectra polarizer easy to install. And with low cost electronic adapters, it's completely receiver compatible.

Best of all is the backing of an industry leader: M/A-COM Omni Spectra. For the name of the authorized dealer near you, call (603) 424-4111 or write: 21 Continental Boulevard, Merrimack, NH 03054.

M/A-COM OMNI SPECTRA, INC.



## TVRO Products Distributors

#### **ARIZONA**

**High Frontier Distribution** 800-382-0395 602-966-9824

#### COLORADO

**Echosphere Corp.** 303-761-4782

#### GEODGIA

Quarles Satellite TV 912-632-8723

#### IDAHO

Recreational Sports & Imports, Inc. 208-523-5721

#### INDIANA

Consumer Satellite Systems 317-845-4400

#### MISSISSIPPI

National Microtech 800-647-6144

601-226-8432

#### MONTANA

Avitel

800-548-9950 406-761-3283

## **NEW HAMPSHIRE**

Satellite Video Services of NH 603-895-3182

### **NEW YORK**

Satellite Video Services, Inc. 518-678-9581

#### OHIC

Satellite Sales, Inc. 216-461-0000

#### **OREGON**

**Wespercom** 503-389-0996

## SOUTH CAROLINA

Satellite Television Systems 803-261-8209

#### **SOUTH DAKOTA**

**Warren Supply** 605-336-1830

#### **TENNESSEE**

National Micro-Dynamics 615-892-3901

#### **TEXAS**

Star Com Distributing 915-263-7512

## VIRGINIA

**Startech, Inc.** 703-387-0062

#### WISCONSIN

Satellite Receivers, Ltd. 414-432-5777

## CANADA

#### ALRERTA

Millman's Comm. Services Ltd. 403-451-3127

#### **BRITISH COLUMBIA**

Channel One Video Corp., Ltd. 604-734-4966

### ONTARIO

Nedco

416-677-1410

#### SASKATCHEWAN

C.A.L.E. Communications, Inc. 306-949-9181



M/A-COM OMNI SPECTRA, INC.

clamoring loud and long at the time. One FCC Commissioner, John C. Doerfer, tired quickly of the cries of protest from the established VHF stations who would be required to move with the plan, and the UHF stations crying for help. Finally, he made a double edged statement that ended up being basically in favor of the establishment. Doerfer said:

"Yes, the spectrum does belong to the public, not the broadcasters. Nevertheless, the prior claims of those entitled to a first service and an equitable distribution of unequal facilities are now to be subrogated for the competive well being of a few broadcasters."

Doerfer was saying, "Yes, we recognize that VHF/UHF intermixing is a bad program; and sure, the public is the loser when stations come on the air, stay on for awhile, and then go off. But why should we try to penalize the early stations just to straighten this mess out?" In the end, this view was to carry four Commission votes, and the de-intermixture program would be set back many more years before technology would bring UHF up to VHF.

All in all, during the period 1948-1957, there really were very few statements made about the airwaves being public property. FCC Chairman Wayne Coy, prior to his departure from the FCC in 1952, eluded the fact that the public was entitled to service from the airwaves. He would never go so far as to come right out and proclaim the tenants of the Communications Act of 1934.

FCC Commissioner Frieda Hennock liked to lean on the 1934 crutch, especially when she was out selling her favorite topic, 25% of all channels being reserved for ETV. Basically, to Com-

## LUXOR DISTRIBUTORS FOR SALES AND SERVICE

ALLSAT, INC.

Shawnee, KS, (913) 541-1469

**AVITEL INTERNATIONAL** 

Great Falls, MT, (406) 761-3283

**DH SATELLITE** 

Prairie DuChien, WI, (608) 326-8406

DIGITAL SATELLITE CORP.

Pasadena, CA, (213) 681-6222

Fairfield, IA, (515) 472-3174

Little Rock, AR, (501) 565-8443

Witchita, KS, (316) 942-3131

**HIGH FRONTIER** 

Tempe, AZ, (602) 966-9824

Seattle, WA

(206) 575-0660, (800) 424-4011

Van Nuys, CA, (213) 873-2268

HOOSIER ELECTRONICS

Terre Haute, IN, (812) 238-1456

KANSAS CITY SATELLITE Kansas City, MO, (816) 455-3991

NORTHWEST SATELLITE

ANTENNA, INC.

Spokane, WA, (509) 534-6972

Tukwila, WA, (206) 575-0472

**PEGASUS SATELLITE TECHNOLOGIES** 

Nashville, TN, (800) 522-TVRO

QUARLES ELECTRONICS

Greenwood, SC

(800) 845-6952, SC (800) 922-9704

**RECREATIONAL SPORTS** 

Idaho Falls, ID, (208) 523-5721

SATELLITE EARTH STATIONS

Mamou, LA, (800) 762-2110

SATELLITE SALES, INC.

Cleveland, OH, (800) 321-1188

Columbus, OH, (614) 431-1517

SATELLITE VIDEO SERVICES

Catskill, NY, (518) 678-9581

Raymond, NH, (603) 895-3182

Altoona, PA, (814) 942-5003

STAR COM

Big Springs, TX, (915) 263-7512

Arlington, TX, (817) 640-1121

San Antonio, TX, (512) 650-3291

Oklahoma City, OK, (405) 672-9617

Jefferson City, MO, (314) 893-6666

TRANSVISION CORPORATION Greenbrae, CA, (415) 924-6963

WARREN SUPPLY

Sioux Falls, SD, (605) 336-1830

IMPORTER TO CANADA

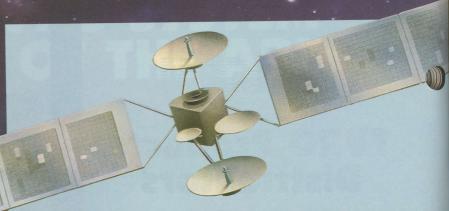
**EVOLUTION TECHNOLOGY INC.** Burlington, Ontario Canada

(416) 335-4422

IMPORTER TO MEXICO

KLAN, S.A. (VIDEO SAT)

Monterrey, Mexico (83) 78 90 15 or 78 97 50



## **A Totally Integrated**

## THE LUXOR® 9534 **ANTENNA ACTUATOR**

Now you can have fully automatic satellite selection at your command by remote control. The location of 30 different satellites can be precisely defined and programmed for automatic recall at the touch of a button. The unit is design coordinated to interface with the Luxor 9550 Satellite Receiver.

## THE LUXOR 9550 REMOTE **CONTROLLED SATELLITE RECEIVER**

The Luxor 9550 gives you total control over the satellite spectrum. 24 channels can be selected, fine-tuned and then programmed for automatic recall. Four different audio systems, mono or stereo, can be selected in either wide or narrow bandwidth for programming with any channel. A built-in stereo processor for both TV audio or stereo sound-only eliminates the necessity for an add-on external stereo processor. An RF modulator in the receiver provides easy connection to any TV set. The 9550 is not only a satellite television receiver, it will feed a hi-fi stereo system with quality audio-only signals. You can also make professional quality VCR recordings via the audio/video baseband outputs. Compare these features with systems costing much more. You'll see the extra value in investing in a Luxor.

## THE LUXOR® HAND-HELD REMOTE COMMANDER

Once programmed, the Luxor Receiver and Actuator can be completely controlled from your armchair by this compact (IR) Infrared remote control. No wires are necessary. You have automatic recall of up to 24 television channels from up to 30 different satellites.

## THE LUXOR® 9536 AUXILIARY **REMOTE SENSOR**

Other television sets, located throughout your home, can receive satellite television by the simple addition of this low-cost IR sensor at each set location. A hand-held Remote Commander can control the receiver and the actuator through the 9536 sensor from any location. You have complete automatic control from every TV set in

LUXOR® (North America) Corp. Bellevue, WA A leader in radio and television technology since 1923.

# LUXOR°

## **Satellite Television Reception System**





Since the beginning of Satellite Television for in-home enjoyment Luxor has been a leader in the development of high-performance technically advanced satellite products. Only the Luxor brand brings you such an extensive combination of electronic features and automatic controls. Here is the finest space-age technology for your home, at an affordable price.

## MICROWAVE AMPLIFIERS/CONVERTERS

LUXOR

The miracle of satellite television reception is made possible by the high performance technology of microwave amplifiers and low noise converters. Each finely constructed unit is thoroughly tested to assure positive, stable, signal input to the satellite receiver. The Downconverter is used in conjunction with an LNA. The optional LNC is a cost effective dual function unit combining an LNA and a Downconverter in a single weatherproof housing. These Low Noise Converters are made to the highest standards of materials, workmanship and reliability. Quality, performance and value are assured.



## LUXOR DISTRIBUTORS FOR SALES AND SERVICE

ALLSAT, INC.

Shawnee, KS, (913) 541-1469

**AVITEL INTERNATIONAL** 

Great Falls, MT, (406) 761-3283

**DH SATELLITE** 

Prairie DuChien, WI, (608) 326-8406

DIGITAL SATELLITE CORP.

Pasadena, CA, (213) 681-6222

Fairfield, IA, (515) 472-3174

Little Rock, AR, (501) 565-8443

Witchita, KS, (316) 942-3131

HIGH FRONTIER

Tempe, AZ, (602) 966-9824

Seattle, WA

(206) 575-0660, (800) 424-4011

Van Nuys, CA, (213) 873-2268

HOOSIER ELECTRONICS

Terre Haute, IN, (812) 238-1456

KANSAS CITY SATELLITE Kansas City, MO, (816) 455-3991

NORTHWEST SATELLITE

ANTENNA, INC.

Spokane, WA, (509) 534-6972

Tukwila, WA, (206) 575-0472

PEGASUS SATELLITE

TECHNOLOGIES

Nashville, TN, (800) 522-TVRO

QUARLES ELECTRONICS

Greenwood, SC

(800) 845-6952, SC (800) 922-9704

RECREATIONAL SPORTS Idaho Falls, ID, (208) 523-5721

SATELLITE EARTH STATIONS

Mamou, LA, (800) 762-2110

SATELLITE SALES, INC.

Cleveland, OH, (800) 321-1188

Columbus, OH, (614) 431-1517

SATELLITE VIDEO SERVICES

Catskill, NY, (518) 678-9581

Raymond, NH, (603) 895-3182

Altoona, PA, (814) 942-5003

STAR COM

Big Springs, TX, (915) 263-7512

Arlington, TX, (817) 640-1121

San Antonio, TX, (512) 650-3291

Oklahoma City, OK, (405) 672-9617

Jefferson City, MO, (314) 893-6666

TRANSVISION CORPORATION

Greenbrae, CA, (415) 924-6963

WARREN SUPPLY

Sioux Falls, SD, (605) 336-1830

IMPORTER TO CANADA EVOLUTION TECHNOLOGY INC.

Burlington, Ontario Canada

(416) 335-4422

IMPORTER TO MEXICO

KLAN, S.A. (VIDEO SAT)

Monterrey, Mexico (83) 78 90 15 or 78 97 50



## INTRODUCING A NEW GENERATION OF ELECTRONIC EXCELLENCE

Now several television sets throughout your home can have independent channel selection at the same time from a single antenna. Neighbors can share one antenna and enjoy the channel of their choice from a single satellite. Advanced block conversion and high performance technology bring you quality picture stability. Temperature-sensitive components are in the receiver, inside the house. A built-in stereo processor for both TV audio and stereo sound-only eliminates the necessity for an external add-on stereo processor. The entire system is easy to install. It's great! Simultaneous multi-channel TV viewing is here.

**FCC** Approved

# Luxor Alock SATELLITE DESCRIPTION

**BLOCK SATELLITE RECEIVER SYSTEM** 



## LUXOR GIVES YOU MUCH MORE

The Luxor Mark 2 gives you more automatic features than systems costing much more! Individual remote control; Programmable memory; Four audio systems including stereo and Dolby noise reduction: Narrow/ Wide band audio. A built-in modulator means easy connection to any TV set. Add a Luxor Actuator Control unit and the entire system, antenna and receiver, can be with a hand-held remote. See for yourself why Luxor is one of America's top selling brands. Luxor. A leader in radio and television technology since 1923.

## THE MARK LNB

A Low Noise Block Converter combining an LNA and a Stabilized DRO Block Downconverter in a single weatherproof microwave unit. Each Mark LNB is video tested to assure peak performance.

## LUXDR®

(North America) Corp Bellevue, WA

A leader in radio and television technology since 1923.

# ARTHUR 'C' MEETS THE POPE

Early in 1983 TVRO pioneer designer **Norman Gillaspie** visited with English pioneer designer **Steve Birkill** and **CSD** carried a three photo set of Gillaspie 'hamming it up' for the Birkill camera. The 'style' of that report was repeated with our December 1983 issue front cover as **U.S. Senator Barry Goldwater** was instructed on the fine art of computer-controlled TVRO terminals by **Astronaut Gene Cernan** and Intersat's **David McClaskey**.

Reader Arthur C. Clarke recently attended an official function at The Vatican where he was introduced to Pope John Paul. Clarke, the 'God-Father' of TVRO worldwide, presented a copy of his recent book (Ascent To Orbit) to Pope John Paul. A photographer captured the presentation 'ceremony' and Clarke himself provides us with the captions.

GILLASPIE and Birkill started it all . . .



SENATOR GOLDWATER plus Cernan and McClaskey kept it going . . .

And Clarke With The Pope



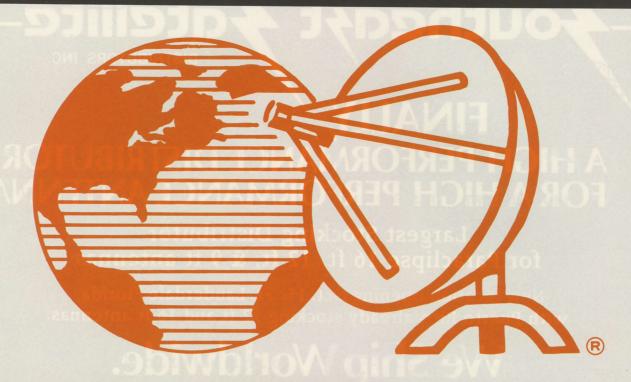
"How nice to meet you at last . . ."



"WHAT - another book???"



"FRANKLY — I was hoping for Odyssey Three!"



SATELLITE TELEVISION SYSTEMS

## CALL TOLL-FREE

• INSIDE INDIANA CALL...
800-321-7291

• OUTSIDE INDIANA CALL...
800-457-33330



COMPLETE SYSTEMS, ANTENNAS, RECEIVERS, LNA'S & ACCESSORIES

"Nation's Largest Satellite Equipment Distributor"
P.O. BOX 3300 ● TERRE HAUTE, INDIANA 47803

hoosier electronics



## FINALLY, A HIGH PERFORMANCE DISTRIBUTOR FOR A HIGH PERFORMANCE ANTENNA

Largest Stocking Distributor for Paraclipse 16 ft, 12 ft, & 9 ft antennas

New location opening Oct. 15; Ft. Lauderdale Florida. with Puerto Rico already stocking 12 ft and 16 ft antennas.

We Ship Worldwide.

PIONEER MEMBER OF

The Voice of the Satellite Earth Station Industry

U.S. 1 North, Tall Pines Industrial Park, P.O. Box 3229, St. Augustine Florida, 32085 National Toll-Free 800 824-DISH / Florida Toll Free 800 824-3300 Technical Inquiries Phone 904 824-1915 or 824-5434 / Telex-523303

ROOTS/ continued from page 25

missioner Hennock, the airwayes were the public's property. But she felt the educators were a better grade of public than the average guy walking down the street, and therefore more entitled to special services.

A handful of Senators waved the public flag during those years, but strangely none mounted the soap box permanently. They merely used it as a stepping stone in their travels. Senator Johnson (Colorado) came the closest to being an on-going supporter of the public's rights to the airwaves, although he stopped short of that by standing just a little bit to the right of Chairman Coy and contending that the public had the right to the services of the airwaves. Senator Johnson was clearly disturbed by the possibility that a handful of major corporations might one day end up controlling the airwaves. Unfortunately, he had left the Senate to become Governor of Colorado by the time Senators Magnuson and Pastore put on their questionable shows for the press in 1954-57.

Senator Magnuson displayed most of his concern for the public investing money in worthless UHF receiving equipment should the Commission abandon UHF (it was talked about for awhile). He was interested in the public interest, but he stopped far short of believing the airwaves themselves

were public domain.

Senator Pastore just wanted to get things straightened out. By 1956 he was tired of being on the hot seat, and had lost confidence in the expertise of the Commission. His will later prevailed when an ad hoc committee of industry people (again, many large broadcasters) was impaneled to de-



\* SATELLITE TRACKING UNIT

(fully programmable)

\* BLOCK CONVERSION RECEIVER



Low threshold for 4.5' antennas

Polarotor 1 control

Audio - video outputs

**Economical** 

Superior performance

Full technical support

1 year warranty

MADE IN USA !!

(dealer inquiries invited)

Downlink. Inc.

14750 s. grant st. bixby, oklahoma 74008 (918) 366-7400

velop recommendations *separate* from the Commission (see companion report in the March issue of CATJ: *The UHF Fiasco*).

There are some who might place the people's sword in the hands of Senator William Benton, who in 1951 proposed the Citizens Advisory Board on Radio and Television. Benton was less concerned about the public being served, than he was about the public being mis-served. The Director of Federal Prisons had prevailed on Benton to "give some thought to the quality of television programming", because in the director's personal view "the overabundance of murders and muggings on television is going to turn our society into a police nightmare". The prison's director wanted violence toned down on television, and to Benton, that meant that someone had to set up an agency to monitor station programs (and program performance). He either felt the 1934 Communications Act barred the FCC from entering the program censorship arena, or he thought the world needed another federal agency, when he drafted his bill calling for such a committee. The bill never got off the ground. Senator Benton was right about one thing when he said, "If we miss the opportunity (to lay down some optimum guidelines for the development of television now-1951), we may miss it not only for a generation, but for keeps." In the ensuing generation, television violence has of course increased, and its permissiveness has expanded twenty fold. One cannot help but wonder how Senator Benton and the Federal Director of Prisons would view the current ABC hit "HOT L Baltimore"!

Finally, there was the Plotkin Memo. Young Harry apparently scared the pants off of some pretty important network people in New York. His memo, when first handed to Senator Magnuson, created a sensation in Washington. It scored NBC and CBS for their dominance of the airwaves. Senator Magnuson was so upset by the Memo's accusations, that he ordered copies immediately transmitted to the Department of Justice and the Federal Communications Commission. The FCC was specifically asked by Senator Magnuson to "set up a continuing investigation into this matter and the (Plotkin) recommendations offered, and to submit reports every 60 days to the Senator, with a final report in 180 days".

Of course, the Commission did nothing of the sort. More than a year later, Attorney Sidney Davis, saddled with making sense of the Plotkin Memo recommendations, would "resign due to ill health" when he tried to push for open hearings of the network practices of that time.

Today, Harry M. Plotkin is a partner in the Washington law firm of Arent, Fox, Kintner, Plotkin and Kahn. Plotkin's firm, according to FCC records, represents very few television broadcasters. It seems the networks have a very long memory. Maybe some day Harry Plotkin will tell it like it really was. It would make interesting reading, and would perhaps make good testimony.

## Make It Easy On Yourself...

Delta now introduces the easy way to buy satellite systems. We call it "Total System Packaging." Delta has taken the time and expense out of testing which satellite components work best together.

We have found that the best selling, most accurate dishes available use a one piece design. That is why we chose to build the Starduster. It is spun from lightweight aircraft type aluminum and its smooth satin finish will deliver crystal clear reception. All electronic components have been tested with the Starduster to assure maximum performance.

Here's how simple it is to get started. Call toll free today and ask for a Delta Select-A-System Chart. It's that easy.



For more information call:







NATIONAL • TOLL FREE: 800-558-5582 WISCONSIN • TOLL FREE: 800-242-2290

DELTA SATELLITE CORPORATION • ONE ECHO PLAZA • CEDARBURG, WI 53012 • TLX: 26886 GRAF/ ANS BK 26886 GRAF • CABLE: DELTA SAT • 414-375-1000

# TURNING MOLNIYA INTO A HOUSEHOLD WORD

Although HBO (et al) may be the carrot to developing a large TVRO ground segment, a quite different application of satellite television systems has recently gotten tremendous international media attention as, possibly, an even more important fulfillment of the promise of (this) technology.

Within the past month, much space has been given by each of the major wire services, print dailies such as The New York Times, The Washington Post, The Los Angeles Times, The London Daily Mail, San Francisco Chronicle — as well as major network news programs to the role of Ken Schaffer's New York based Orbita Technologies Corp. in bringing the USSR's Programma I network, via Molniya, to students and scholars at major US universities.

A large part of 'the story' has been Kenny's quick insistence that Molniya reception is nothing new to what he characterizes as 'quasi-synchronous satellite fans.' "That this kind of capability has not been brought out of the hobbyists' closet years ago is unpardonable" he says. But, he accurately points out, a developed turnkey system and the discrete components required to deal with making Soviet domestic programming available to interested universities — satellite laymen,' as it were — has never, 'till the work of the Orbita Team, been refined ("ready to ship") — and made available. (\*)

Kenny is, as we've come to know, colorful. His musings go far beyond the 'technology' in his conversations with the media. Well-known to industry members and CSD readers for his mocking — and usually incisive — mix of technologies, sociology, good humored puns and applications, his industry debut was chronicled in CSD for June, 1981, where his self-described 'prank' of offering "\$100 Reward" for Ghorizont reception at the Washington STT show that April turned many display antennas to — for the first time — the Eastern Sky.

Since that time, he's accomplished such twists as turning a small note in the back of (July) 1982's CSD into reality; ABC-TV's legendary "live" Mt. Everest climb. More recently, been the prime visionary, with MPI's **Peter Sutro**, of the "**PD**" ("Personal Dish"), an integrated

#### Interview conducted by Wes Thomas on behalf of CSD Magazine.

\*/The first academic installation for Molniya was installed in 1981 at Creighton University (Omaha) by Lee Lubbers (see CSD for October 15, 1983 and November 1, 1983). Lubbers challenges the Schaffer installation as being 'first' while Schaffer defends the Columbia system as being the first to popularize University eavesdropping on internal Russian television. Lubbers did it 'first,' Schaffer/Columbia did it with a big splash and history is apt to remember Columbia and not Lubbers.

\*\*/ Kenny's idea to apply 'companding' to FM transmission was an honest technical breakthrough which raised the medium's maximum signal-to-noise ratio from roughly 60 dB to past 100 dB; his first units debuted with the rock bands Kiss and Electric Light Orchestra. Among the next five customers were NASA, Jet Propulsion Laboratories and Bell Telephone Laboratories. Such companding techniques are not 'standard' on the bulk of narrow-band satellite services, as well.



system design for Galaxy I. He has a number of interesting patents pending on his technological visions as to what kind of system millions of Americans might eventually elect for their Galaxy terminals. (See "Future TVRO: This is DBS" in October's CSD if you're interested in reviewing some of Kenny's 'domestic' observations.)

From very early on, Ken has been quick to point out his feeling that Orbita's New York City venue has been crucial to effectuating virtually all of his activities. "I eat lunch at the same hot-dog stand as HBO," he's quick to quip. (He's most proud that the Show-Biz daily **Variety** recently 'ran' with a headline he 'just had to give them:' "Time Goes Above and Biondi," for their spread on HBO's surprise decision to terminate the chairmanship of Frank Biondi!)

Beyond the quips, Ken's "past background" is one (as the international attention now being given Orbita attests) of making pop trends out of visions. For Kenny, this unique talent has been honed since the late 1960's, when he was the public architect for many "appropriate-at-the-time" (his description) trends — some of the biggest, ranging from masterminding the public personas of pop superstars Jimi Hendrix and Alice Cooper, spanning thru to developing platforms for Timothy Leary and the famous Comet Kohoutek (which 'made' the cover of both **Time** and **Newsweek** but, Schaffer confesses, was "just a joke.")

Following Kohoutek, Kenny's lifelong love of radios (he was licensed as an amateur radio operator at the age of 8; call N2KS) and electronics became his livelihood. He's been a prime developer of numerous devices that are now-standard in broadcasting and music, ranging from digital audio devices (the digital delay line, harmonizer, time compression/expansion) to the \$4500 wireless guitars and microphones that bear his name and are used by virtually every major rock band, from the Rolling Stones and Pink Floyd to The Who, Yes and Van Halen (\*\*)

Satellite television grabbed Ken in 1980. As he explains "It's just up the band from 20 metres . . ." From early on, as his "Reward" attests, International television (DX) possibilities were the most interesting and, as he says — for reasons that become obvious in the following conversation — "promising." Most of his "TVRO" work has, since that time, been spent on the Eastern Arc. His thoughts about the context of these developments bear telling.

**CSD:** Kenny, you call your Molniya system an Orbita Terminal. Is it, then, dedicated completely to Molniya?

KS: "The prototype, at Columbia (University) is. The division of the school that 'took the chance' against 'expert advice' is called The W. Averell Harriman Institute for the Advanced Study of the Soviet Union, headed by a very clear-seeing Assistant Director named Jonathan Sanders. Their interest is only in internal Soviet program-

'The mount we must use to give good Molniya is, of course, an X/Y not something you can order from Echosphere. An Az/El just won't do for following 'Molni' because of the singularity you get at very high look angles. So we designed and fabricated our own mil-spec X/Y and galvanized it three times to befit the top of a 15 story Manhattan university building. The mount was designed and built by Bob Crean of Roundhouse. Once we had it up, an outside structural engineering consultant retained by Columbia's buildings and facilities staff was obviously impressed; he put a mock sign on the base: "In the event of nuclear attack, hide under this antenna: it'll be the last thing in New York to blow!" Bob does good work!

Our next systems will be split between the X/Y and Bob's new X/Y/Z mount, which will allow the school's investment to be split between Russian Studies and other departments, 'cause it'll do anywhere in the sky very neatly. The mount is also getting attention for other uses; it's mentioned next month in Popular Computing, which did an article on how to use modified TVRO equipment - X/Y/Z mount, too — for radio astronomy, another wonderful obsession that'll be coming out of obscurity very soon.

Oh, yes: when we started getting serious with developing this capability, we didn't have the cash to spend on graphic artists for logos and stuff; that's where "Orbita" comes from. We just lifted the logo off Programma I. Cryillic and all!"

CSD: The antenna you are using is an ECI 11'?

KS: "It is. On the 11" antenna we're completely out of sparklies, of course. But each of the installations we've lined up for the next round are going to have 5 metre reflectors, 'cause the system is no longer experimental in any way, as it was at Columbia, and my eye can see there are a few dB of video S/N left before I'd call it studio-quality SECAM; the viewers don't know, they're all amazed: "This is better than what I get at home off Channel 2!", and more than one TV network news crew has paled a bit, looking kind of disoriented, saying "Moscow looks better than what we get in our control room!!!" It's fun, hearing all that, but I've been in SECAM video control rooms in France, and there's a few dB left to get. It comes off, of course, paradoxical — and hasn't gone unnoticed — that we get Moscow better than Manhattan gets cable! But we got to 16' now.'

CSD: "The tighter beamwidth will make it harder on the computer? KS: "We've got the motors running a little differently than what you'd use for going from Galaxy to Satcom 4. In fact, another very wonderful contributor to the terminal was Warner Electric & Brake Co., who custom fabricated actuators to our specifications in their model shop. Columbia's ears move through Molniya's loop about 50° in the X axis, almost 20° in Y; we've got the computer-motor-interface stuff down to about .15° resolution — repeatably, so far — all of which is very invisible on the tube. The tracking runs off a combination of directed data — it knows which way the satellite is moving, it knows each bird's nominal track and relative ground-speeds, so there's no "hunting thru peak" as you would have with a more standard steptracking system. It's very smooth.

"We're also working with two other types of moving-satellite tracking methods, called "Monopulse," where you have four subordinate LNAs directing the antenna to move up, down, left, right based on the relative amplitudes each receives as the satellite moves. It doesn't require a computer. It's military radar stuff - the cat's pajama's in following moving sources.

'We're also building up a Conical system, where the antenna periodically does a tiny conical movement about the bird, so that it's peaked up before the AGC changes detectably to the picture. Our stringers on this are at RCA, down in Princeton (N.J.) They've been working on this stuff since the fifties. We've just had to be patient while they work; they keep wanting to make it into a stationary phased-array (for a couple of hundred thousand dollars)! These guys are very solid-state!'

CSD: The computer display is very interesting . . .

KS: "A coup! We put up moving map displays that show Molniya's ground track in real-time - very similar to Steve Birkill's famous illustration — and have the active Molniya moving around the track as a little Hammer & Sickle. As soon as the active Molniya 'turns off', it goes to reverse video, and the new Molniya that's been coming up the Mississippi takes its place. Down in the corner of the screen, you see



ECI 11 FOOT/ Crean tracking mount/ a 'bomb shelter' that will withstand nuclear blasts. Orbita Systems hyper-energetic Kenny Schaffer (left) with Columbia's Jonathan Sanders 15 stories closer to Molniva.

"Columbia University" — the dish, with its direction, is represented as a modified parabolic — sort of a bastardized version of the CBS logo a big Red Eye, actually! Then, of course, we have the graphics boxes with times for New York, Moscow, Novosibirsk and Vladivostok. Next week we'll be adding a second hi-res page with a global view all four Molniyas and where they're at in real-time.

"It's funstuff. The kids who are using the system, who probably don't care much about technology, get the context, the overview, subliminally — and come to understand — apppreciate — what is happening. It's an inseparable component of the Orbita Philosophy that comes with the Orbita Terminal. It's refined. You get the whole

CSD: Aren't you really consumerizing Molniya?

KS: "The whole point of what Orbita is doing here really has very little to do with technology. You know, and I know, that there's very little that's been "invented" to do this. Much of what we've done is based on published data. Obscure published data, not a little of it in CSD. That's the first place I every heard of Molniya; I have a videotape -what a wonderful tape! — that dates back to 1980 of Coop making the first Molniya acquisition ever in America! Sure, I had a bigger budget to do this thing right than Coop did — gee, Bob, do we ever get better pictures than you had on your tape! But you know, and I know, that that's throwing dollars — which I had — at problems; not "invention." If someone wants to see wonderful, real, inventions, I have a drawerful of patent applications I'm proud of!

"It's a development, a refinement — an availability not an invention. The part that scares me, that made me can everything else to

## OOP'S SATELLITE DIGEST-

concentrate on doing this, is how important I feel this is as a contribution to make the world a little nicer — and how it's been there for five years to do, and all we've had is ole' Lee Lubbers taking trips to Paris and all, but not one other school. I think it's unforgivable that this kind of application has been there for years, just waiting for the taking. That it's not caught on is, to me, not a good sign of what's happening in our country, generally.

"This is a very important capability. We've packaged a travelling Molniya Roadshow to go to schools and give students and faculty a couple of all-nighters of Soviet TV. To learn from - in ways the narrations and editorials and translations we all get from Dan Rather can't touch. The Roadshow, by the way, is called "Windows on the World," and is being booked by the nation's biggest college lecture booking agency — the guys who book Gordon Liddy and Timothy Leary [the hottest show on campus!]; we're packaging it just like a rock

n' roll tour. Just like Alice Cooper.

'Cause, that's how you effect a trend in America. That's how you get university funding people to get off and actually do this, proliferate this kind of amazing technology. You don't do it thru the "Educator's Gazette." You do it on Johnny Carson. That's what we're doing, and, as you know, it's getting adopted, very naturally, as one of the most exciting educational tools ever developed. There probably aren't more than a couple of dozen universities that can justify a dedicated Molniya terminal for Russian studies, and we have commitments from quite a number; the Sovietologists just finished their annual confab here in New York this past weekend, and an 'invite' to Columbia was the hottest ticket in town!

"One of the points I've been very vocal about with both potential customers and interviewers is this: we live in an immediategratification society. There are always the couple of well-intentioned professors who volunteer "We can save some money if you will sell us tapes!" They're completely missing the point. The watchwords, if you will — the watchwords of the generation under-35 are "Who Wants Yesterday's Papers," the old Rolling Stones song. "Who Wants Yesterday's Papers?!"

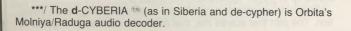
"It's got to be live. Live is magic. Well-intentioned tapes are static, the Dead Sea Scrolls, another medium. Within a very short time, the 'statistics' will be coming in on how much faster the students come to assimilate the language, the culture, the differences in perspective. We have a very-low cost, down-and-dirty SECAM-NTSC conversion method for transporting the signal through the campus. Let the student go to his room at night and lay back in his bed and watch the "Million Ruble Movie" with a beer; that's how kids learn these days. It's only rock n' roll .

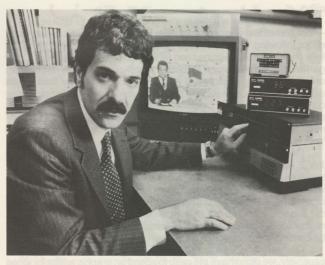
This utilization of technology is going to make the world small. People who live in glass houses don't throw stones. There are no secrets anymore. It's Marshall McLuhan's Global Village, for real. For more than ten years now intellectuals and academics have been having meetings, talking about all these possibilities, talking all night with glasses of Sherry. Meeting after meeting. All they do is talk and exchange memos. They talk in (academic) circles and nothing gets done! Lovely follows, I'm sure, but they wouldn't have lasted three

nights on a Rolling Stones tour.

'This time it's just too important. I closed up my rock n' roll electronic-nirvana company last year and retreated into my bedroom, if you will, and designed things like our d-CYBERIA (\*\*\*) and started on the mount parameters with Bob Crean and the computer graphics codes that I realized had to be part of a mature Molniya system. I know of two other private Molniya terminals in this country. Both are, more, examples of what perseverance and gaffer's tape can accomplish not professional systems. You know how I adore that stuff — half my house is a breadboard! - and everything good comes from 'ham operators' working for themselves at 4 in the morning with their wives screaming "Come To Bed Already!" - but you can't expect nonhobbyists to understand or babysit such miracles.

Application and development — certainly not invention — of technology is the 'story' here; an Orbita Terminal is a dozen proprietary technological components, developed for this very specifiable





SCHAFFER AT THE CONTROLS/ first Orbita system installed for Columbia uses Apple controls and advanced computer graphics to convey to system user the exact position of the 'Molni' bird in use as well as earth-position of the other three in the 'chain.' Complete description of Molniya system is found in CSD ANTHOLOGY available from CSD. (Photo by Jeff Dodge)

application by a team that included Roundhouse, DX Communications, Warner Electric, ECI, MTI and, of course, Orbita. We've even come up with a modification package to the Mitsubishi PU-50 Videoprinter to give the scholars hard copy and wonderful VCR controls for late-hour SECAM-K recording — but those kind of options are prerequisite: what now make it a fait accompli that US scholars have been initiated to live international programming! Now that Columbia University has announced — and the world has looked in awe at this amazing capability, "Look, Molly, these fellas in New York get Moscow better than we get Billings!" - it's become ok. It's clear that we've succeeded in making it like CAT Scan machines. Every 'clinic' needs

CSD: "You're downplaying the technology, but, having seen the system in operation, I know that you have done a very credible job of refining things that were really breadboards, if at all, before.

KS: "Yeah, yeah, yeah, say the Beatles . . . our audio is clean, with over 40 dB signal to noise . . . our video is fully restored, recordable and all that. The system is no Kluge machine, I'm happy. But technology is just the icing here. "Let me give you what you want .. so you'll come to want what I have to give you" is really what we're doing. We want kids to grow up in the world knowing that politically imposed domains and dominions are no longer appropriate to a world of Comstar, Pan Am, Concorde, Molniya, ASATs and the Beatles.

"People who live in glass houses don't throw stones." THAT'S what we're doing. We're going to spread this capability around the world. Save the Babies . . . get to kids while their brains are still malliable, and demonstrate — no need to 'explain' — that we're all products of our environments. People from different environments behave differently, have different priorities . . . and rightly so.

'I'm not so stupid as to suggest for a minute that being able to look at people via satellite television is the answer to the world's problems. But it is an element. It's what we can do. We've got to see it proliferate — not just domestically, but throughout the world. It's 'people to people,' for real. It's as important for Argentines to see France as it is Moscovites to see Montreal. Like any great technology, it will proliferate — beyond nationalist borders. You can't keep a good amp down!

"People see differences as threats. It's built-in, human reptillian territoriality — was probably necessary to fight off the wolves over the eons - but now must be disposed of! Watching the internal TV of other people . . . being privy to their pillow talk . . . is a way, over time, of getting access to these folk. How better to learn about people than to watch their own TV dialogs?! Very quickly you come to see the

# Use What You Sell To Sell You!

As a serious professional in the satellite antenna business, you know that effective advertising is a key ingredient in your marketing program. And, the most effective advertising medium for you to use is what you're selling now — Television!

Professionally-produced television commercials create impact, generate response and increase sales. And, promoting your image through effective television messages sure can keep you out in front of your competition.

#### Television advertising works!

- ENHANCE the image of your business.
- INCREASE your sales.
- IDENTIFY your firm as a leader.

We have created a series of 30-second commercials that produce results in a professional, image building manner. They are working now and they can work for you!

We will support only one client in each television market by supplying top-quality, completely customized television spots. Our satellite television marketing program is ready now! If you're ready to become the leader in your market area, we're ready to help.

For complete information, video tape samples and a copy of our booklet "Television Advertising Guide," please send \$25 to:

Management Resources Group 107 Virginia Avenue, North Winter Park, FL 32789 (305) 645-2611 (please specify VHS or Beta)

SERIOUS ADVERTISING FOR SERIOUS PROFESSIONALS

PAGE 40/CSD/12-84





### **ОРБИТА**

context of their behavior. The next stage is to **tolerate** it. **Soon**, **forgive it**. And if it's a good-idea-you-would-never-had-yourself you might even come to appreciate or adopt what you earlier reacted to as 'threatening differences.' That's our theory; we're fighting the NIH ('Not Invented Here') theory on a world level. These technologically unworkable nationalist divisions don't work any better in the world than they do in territorial industry.

The Soviet Union is not 'special' to me, It could have been Rio. I chose the USSR because, first technically its the most challenging to do well. That's my "come." Second, it's clearly more important than Rio, given the world right now. We've got to have a cadre of Americans who 'understand' the Soviet Union — or we'll never get to 12 GHz!

CSD: Columbia University's press announcement states that they've decided to support you further in developing this kind of technology. Now that you've gone to printed circuit boards for each dedicated element of the system will you be making the components — the computer interfaces, the audio decoder and taping equipment — available to other installers?

KS: "Columbia has bankrolled something called 'The Working Group on Soviet Television,' which will study the Soviet's use of the medium for didactic purposes. Content analysis type stuff. They'll be publishing their results; the Working Group will make possible the funding for us to develop new capabilities vis a vis Molniya, but also for other satellites. We've been given access to a tremendous pool of talent in a number of areas and enough support to complete several of my obscure development ideas.

"The overall plan is to make **Orbita** an 'international one-stop' for gadgets you need for international access, generally. We'll be doing turnkeys for a little while, until we reach a critical mass of successful

installations so that the success of the technology's acceptance is ensured. **One** university, even one so prestigious as Columbia, does not a trend make. With the commitments we already have, within several months enough schools will have these capabilities. As soon as we have a few more under the belt, we'll be making the equipment available. There are many schools! Believe it or not, we already have two well-endowed secondary schools committed."

CSD: What kind of things have you seen on Programma I that illustrate that thinking?

KS: "The first day we watched Molniya they were running a TV mini-series about the KGB vs the CIA. Beyond the political bull, the same movie, if you ask me. My favorite was a Russian highway scene where it started raining. Traffic stopped; everybody pulled off the road, got out of their cars and ATTACHED THEIR WINDSHIELDS! Huh? "Yes," explained a Sovietologist watching this amidst a room packed with gawking graduate students: "There was a terrible rubber shortage back in the mid-50's." Some guy broke his wipers and stole another guy's. It daisy-chained, and soon, it became appropriate behavior to remove your windshield wipers when your car was parked and hide them in the glove compartment — if you didn't, someone might steal them, and you'd be off the air — oops, off the road — till . . .

"Well that made sense, I guess. I forgave them.

"As it turned out, the rubber shortage ended in the 60's, but — as with all rituals, even ours — nobody noticed to **change** the habit. They still hide their windshield wipers even though the environment has changed. Sounds like us with 50 dB LNAs!"

"Then, I think; 'What do WE do that they might find bizarre?' An example came to mind real fast. How about my friends who have \$2000 Nakamichi stereos in their cars . . . every time they park, they remove the Nakamichi's and carry them up in the elevator! What would a Russian think about that?

"This kind of TV goes beyond political boundaries. Look at the videographic map of Europe and you'll see that it's almost a solution to the famous three color map puzzle; almost no adjoining countries use the same video standard. That's not for technical reasons.

"I have a silly-sounding, but really quite poignant line I've probably said to too many interviewers that I'll have to say to you: "Watching Soviet Television has made me come to better understand ... my girlfriend, Marian. (She, also, is different than me.)

"On that note, consider that this is a demonstration of the kinds of wonderful things we could do with space technology . . . instead of things like ASATs."

\*\*\*\*/ Ken Schaffer, Orbita Technologies Corporation, 21 West 58th Street, New York, NY. 10022; 212/371-2335.

# SMATV SYSTEM DESIGN/ LOW COST BDC TWO

#### **UNIQUE BDC 'Head End' Problems**

Last month we investigated the various problems which the installer of a multi-receiver home TVRO system must consider. In particular, we were concerned with maintaining adequate signal 'levels' to **all** of the BDC receivers connected to the common antenna, and the isola-

tion and powering requirements of the system. This month we shall look at the head end or antenna site requirements.

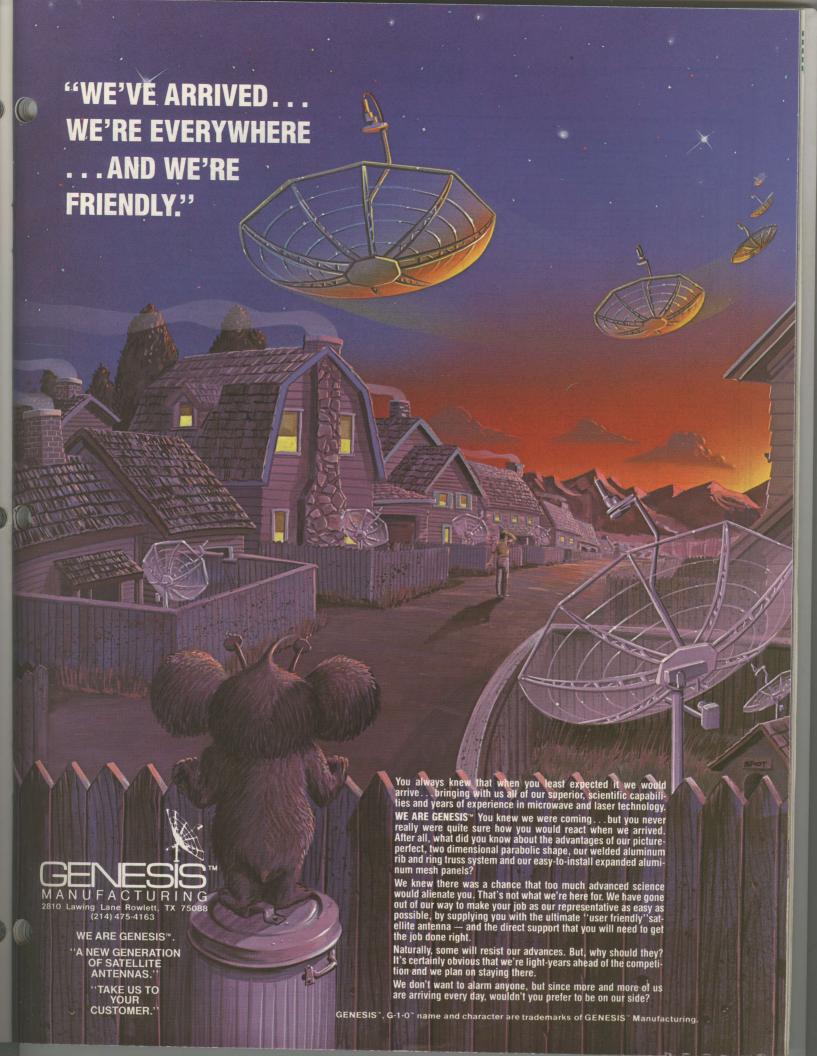
First the ground rules. Each BDC receiver operates by sending to it, from the downconverter, some minimum amount of 'IF signal.' If the receiver does not receive that 'minimum signal,' the receiver fails to perform properly. Poor performance results in:

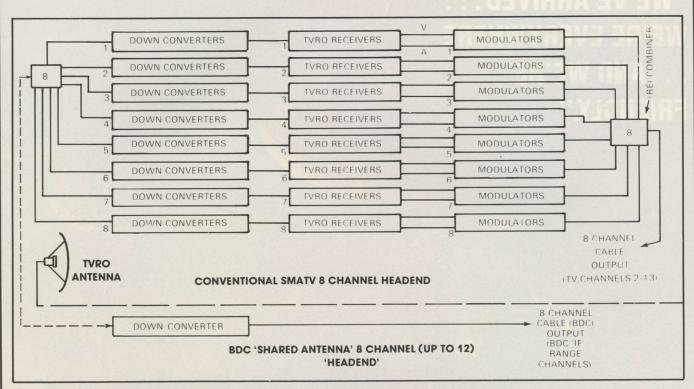
1) Signals which have noise (snow or sparklies);

2) Signals with noisy audio or difficult to tune audio;

3) Signals which have blemishes caused by not reaching 'threshold' with the signal driving the receiver(s).

We learned last month that there is a fixed-amount of signal available coming out of the block downconverter and this fixed amount of signal diminishes as it travels (1) through cable (because of the 'resistance' of the cable), or, (2) through signal line 'splitters' designed to connect two or more receivers to the same (common) antenna. We also learned that if the cable losses and the splitter losses add-up to excessive signal loss, we must re-amplify the BDC IF signal with one or more external line amplifiers to maintain the minimum amount of signal required to each of the individual receivers connected to the system. This is basically 'CATV' or 'SMATV' technology although as Roger Linde, president of TX Engineering wrote in CSD/2 ('Feedback') for November 15th, the equipment one normally utilizes for CATV (or SMATV) installations may well not work adequately for TVRO BDC systems. We looked at why this is true in our last month's





CSD segment.

To understand the full nature of the problem, we have to focus our attention on the signal levels, and signal quality, which we provide to the master block downconverter in the system.

Basics first. The BDC system is able to deliver multi-channels of service to separate receiver/demodulators because the entire satellite band of transponders is shifted as a (set) to a new, lower 'IF' (intermediate frequency). This differs from the standard home (single conversion) system because in the single (or double) conversion system only one channel at a time leaves the downconverter. In the block system, all 12 transponders (or the full 'polarization side' of a

ISOLATOR DOWN #1 TO RECEIVER ONE ONE CHANNEL TVRO ISOLATOR DOWN # 2 ANTENNA, TO RECEIVER TWO ONE CHANNEL SINGLE CONVERSION 'SHARED' **BLOCK CONVERSION/SHARED** TO ALL RECEIVERS BLOCK DOWN - 12 CHANNELS CONVERTER ONE POLARIZATION satellite) leave the downconverter as a **group**. It is possible for a quantity of receivers to share an antenna in a single conversion system but the system is complex and complicated; and seldom customer-friendly. The block approach makes sharing quite straightforward and each receiver that is connected to the 'cable distribution system' carrying the block of signals is able to tune in **any** of those channels **independently** of the other receivers connected to the same 'BDC cable system.' Obviously the performance of this sytem depends upon two elements:

- The quality of service produced by the antenna/LNA/downconverter, and
- The quality of service maintained between the block downconverter (output) and the input to the individual receivers.

We have already studied the parameters of maintaining quality service **between** the BDC and the receivers (**CSD** for **November**), which leaves us looking at the 'head end' component.

#### **HEAD End?**

Like it or not, you are in 'the cable biz' with a system serving two or more receivers from a common antenna. So we will adopt some of the cable 'terminology' to go along with our adoption of cable technology. The **antenna portion** of the 'cable plant' is called a '**head end**' (or headend) in the cable industry.

Our BDC type of headend differs from the normal cable (or SMATV) headend because we are **not individually processing** each of the channels in the system. That is the only significant difference. As past reports in this multiple-part series have shown, cable/SMATV functions by providing independent receivers for **each** of the TV channels to be cable-carried, individual modulators or signal processors for **each** such channel and it 'recombines' all of these channels into a single 'block' of channels or signals before sending the channels down a cable line. The end result, in our BDC 'headend,' is no different than the end result in a true (conventional) cable 'headend'; we also leave the 'headend' with all channels combined together for carriage on a single cable. The **only real difference** is that we **don't take them apart** (channel by channel) for individual channel processing **before** we put them all back together again (for single cable carriage). **We diagram that here** for you.

The 'caveats' or engineering rules, however, which apply to one also apply to the other.

1) The headend must have some rigidly engineered output signal

- 2) We must NOW what the output signal level is (i.e. how much signal is there) since our paper-calculations for the distribution system will depend upon that number (see CSD for Novem-
- 3) The signals leaving our 'headend' must be clean and interference free before they go into the cable or we will not be able to properly 'resolve' those signals at the individual receiving loca-

The true cable/SMATV headend takes the individual channels through electronic processing one-channel-at-a-time for good reason; very seldom are any two channels 'identical' in signal strength or signal quality when those channels come 'off the air.' The primary purpose of the headend in a true cable/SMATV system is to 'equalize' (as in making identical in electrical quality) each of the individual TV channels being processed for cable carriage. Since this is the one function our BDC 'headend' does not do, we obviously have to be somewhat careful that by skipping 'this step' we don't penalize the viewers in the process. (If this was not considered a necessary step, cable would have abandoned this expensive segment long ago).

#### **HOW To 'Equalize'?**

Remember that our very simple 'headend' treats all channels received from the satellite in an identical electrical manner; they are all received by the same LNA, all downconverted to the block 'IF' range with the same downconverter, and all exit that downconverter to travel through the same cable (together) to the individual TVRO receivers connected to the system finger-ends. How, if we treat them all with the same equipment as a 'group,' can we do anything to individually 'treat' them for whatever it is that may 'ail' one or two channels individually?

Enter FM. Our TVRO signals, coming from the satellite, are still in their FM (or frequency modulation) 'format.' That's good; in fact it is downright fortunate. On the other hand, the normal TV signal is AM (amplitude modulation) and the TV receiver at the end of the line that receives the actual picture and sound is an 'AM device.' The TVRO demodulator, or customer receiver, is (among other things) and 'interface' which converts the satellite's FM signals into user-compatible AM signals

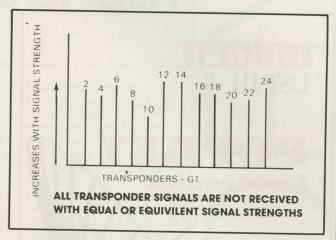
FM, unlike AM, has certain operating parameters which will aid us in this situation. The first is carrier to noise ratio; sometimes abbreviated CNR. You have heard the term 'threshold'; that means the amount of signal required by the receiver to produce pictures with only modest amounts of sparklies (see CSD of November 1984, page 16). In this instance, the better our CNR the more 'equal' our individual signals will appear on the customer receivers. Ideally, every satellite signal being received and 'processed' by our block downconverter would have the same CNR. There is no such ideal example in the real world and we have small, or large, variations in CNR between transponders received from the same satellite at the same location, and at the same point in time.

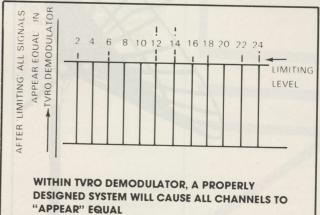
Which brings us to our second FM factor that works to our advantage; limiting. This is a term used to describe a particular effect found in the TVRO receiver. With FM, the receiver will amplify or boost in signal strength the FM signals until they reach a certain (predetermined) signal level. At this point, the signal 'goes into limiting.' What

does that mean?

Simply that no additional amount of signal, applied to the input to the receiver, will result in any additional output from the receiver. The receiver takes more and more signal until the output signal level reaches the 'limiting level' and then the output level ceases to increase even though the input signal level may continue to increase. Another word that means about the same thing, unique to the satellite field, is 'saturation.' You can picture a sponge soaking up water (signal) until the sponge is full; then it stops accepting any more water (signal) and the capacity of the sponge self-limits at that point.

Now let's put those two words or FM elements back together. Logic suggests that we would like to see the satellite FM signals going into the individual cable connected TVRO receivers at a strong enough level that even the weakest satellite signal in the 'group' is causing a limiting action in the receiver(s). Why? Because if the receiver is 'into limiting,' and the receiver is functioning properly, we





can then be assured that every individual transponder (as received by every individual cable connected receiver) will have attained the same identical reception quality on the miniature cable system. And that quality level will be, in a word, 'perfect.'

Limiting is not a phrase we hear a great deal in the TVRO world even though it is a basic property of virtually every FM system. There are no user or technician convenient metering jacks where you can connect a meter which says 'Limiting!', or alternately, 'Not Quite Limiting.' With individual receivers, some (or much) research, and some skills you could fashion such a metering system which would give you this important information. If we cannot measure limiting simply, or conveniently, how can we determine that we have 'limiting'?

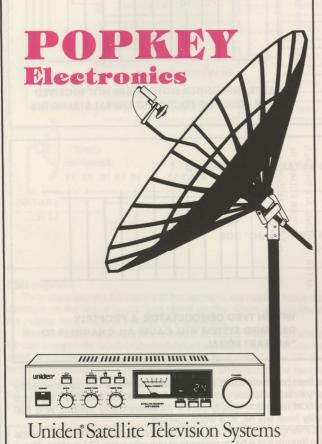
CNR, or Carrier To Noise Ratio. Now CNR is a slightly more familiar phrase than 'limiting' in TVRO, but with the limited exception of instructions provided with AVCOM receivers, the typical installer does not have a good and ready reference source where he can be instructed on the fine art of measuring CNR in a receiving system. There are special meters around which allow you to measure CNR (they are called 'Power Meters' and sell in the used market for upwards of \$400 typically) but very few TVRO installers have ever seen one, much less own one today. Still, CNR is instructive because if we know and understand how it may inter-relate with 'limiting,' we can at least grasp the foundation required here.

Bigger CNRs are better than smaller CNRs. You cannot have too much CNR. You get more CNR by doing one or both of two things:

1) Making the C larger, 2) Making the N smaller.

Remember that CNR stands for Carrier To Noise (or more appropriately, for the H. Paul Shuch crowd, carrier plus noise to noise) ratio. The key word here is ratio; the relative relationship between two separate ingredients. Carrier is our signal, noise is that nasty element which we all spend long hours battling in one form or another. More carrier in the system equates to more signal to the receivers; less

## uniden



We Feature These Quality Lines

WINEGARD

CHAPARRAL COM-SAT

CHANNEL MASTER ANDERSON REGENCY

HAMMERBLOW

**EAGLE SATELLITE SYSTEMS** 

· 5 Locations to Serve You ·

427 N. Clay Street, P.O. Box 1431 Green Bay, WI 54301 · 414-437-5445 1-800-558-7362 National Toll Free 1-800-242-7348 Wisconsin Toll Free

> CST 8:00-5:00 - Dealers Only -

Serving the Electronics Trade Since 1932

noise in the system equates to less interference to our receivers. The ratio between the carrier, and the noise, is important.

The nearest most dealers come to CNR is the single line of type in the receiver specification sheets, manuals or advertisements which state things like:

'CNR/ 8 dB.'

How do you make that information work for you?

First of all the phrase 'CNR/8 dB' is totally meaningless. It does not tell you anything you need to know or can use. Why? Simply because as stated here (and as taken from a well known receiver data sheet) there is no definition of the phrase. What the receiver manufacturer is probably trying to tell you is that if you send a signal into his receiver which has 8 dB more carrier (plus noise) than noise alone, you will have some (not defined) level of picture service on the screen. He would like you to believe that this is a good number and that the picture you will see when you have an 8 dB CNR is a 'perfect picture.' Unfortunately, there is no such receiver in the world today if you insist that 'perfect' means no degradation from ANY noise.

To make use of the line entry 'CNR/8 dB' you need to know several additional things about the receiver and the tests conducted to arrive at that number. For example, some of what you need to know is:

- 1) What was the video signal-to-noise-ratio when the receiver was presented with a CNR of 8 dB? Anything less than 48 dB video signal to noise (SNR) is degraded to the eye. And a TV station would not accept (for re-transmission purposes) a signal any lower than 52 dB SNR.
- 2) Was the video signal being transmitted at the time 'static' (as in color bars) or was it 'moving' (as in program)?
- Was the transponder being received being modulated to a full 36 MHz bandwidth, or was it somewhat 'compressed' (such as 30 or 28 MHz)?

And that's just for openers! Obviously this is a complex subject, and while it all has a direct bearing on understanding the limitations of our simple BDC 'block headend,' it is a far too complex subject for detailed analysis here. We'll return to it, in depth, at another time.

Humm. If we can't quickly and easily measure limiting or CNR, and vet we need to have some handle on how our system is performing to insure that all of the cable connected receivers produce 'equal pictures' on all of the transponder channels, where do we turn for help?

The answer is easy, if not highly accurate; a television set. Let's re-state our objective here:

'We want our BDC 'headend' to produce sufficient signal that the weakest channel or transponder from the satellite chosen looks no different to the viewer than the strongest signal or channel from the same satellite."

'We now know that if we can somehow cause the weakest channel to arrive at every cable connected receiver with sufficient strength that it will cause the TVRO receiver to 'go into limiting,' we are probably at a point where we cannot tell, with our eyeball studying a TV screen, which signal is in fact the weakest in the lot.

#### **MINIMUM Service Levels**

Using the receiver's built-in metering system, or, using the techniques described in CSD for May 1984 ('Tweeking: The Art of Being Good,' page 8) you can at least develop a 'minimum' set of noncorrected relative numbers on your own. If the strongest signals register an '8' on the meter and the weakest transponder registers a '6,' and you can look at the screen and still see noise (degradation) in the weaker transponder(s), you know that '6' is not 'into limiting.' How do we get there, from where we are?

There is only one variable we can play with; well, two if you are very good at what you do.

- 1) The antenna system, ahead of the downconverter, is our one true variable. The combination of the TVRO reflector surface/ feed/and LNA form our 'signal catching package.' If we have too little signal on some channels to be 'into limiting,' we have to make our signal catching system more efficient.
- 2) Or, alternately, we may find that by swapping around downconverters and/or receivers that we can locate a downconverter which performs better than the first one we began our reception 'tests' with.

# Oh, what a feeling to be America's top Uniden Satellite Dealer!



Uniden® wants their top dealer to have a new Toyota truck...free.

As a Uniden® Satellite dealer, you already know the advantages of selling The System from Uniden.®

You know about the prestige of dealing with a world leader in electronics. You know about offering your customers perfectly-matched, totally-integrated systems. And you know the value of offering your customers Uniden's commitment to nationwide sales and service support.

What you may not have known, though, is how Uniden® plans to reward dealers like yourself between September 1st and December 31st, 1984. With Sales Recognition Plaques. With Uniden® Extend-A-Phone® cordless phones and answering machines. And with something larger still—a new 1985 Toyota Sport Truck.

If you haven't already gotten complete details on how to qualify, contact your Uniden® Distributor. He'll give you all the facts on how you can turn your sales into profits...and a chance at winning a new Toyota truck. And at the same time, be sure to ask for details on Uniden's multimillion dollar ad campaign, dealer decor kit, sales literature and product information videotapes.

Get started now on becoming a top Uniden® Satellite dealer. It can really be quite a feeling! Uniden® Satellite

Uniden® Satellite
Technology, Inc. 200 Park
Avenue, New York, New
York 10166; 15161 Triton
Lane, Huntington Beach,
California 92649; or 6345
Castleway Court, Indianapolis, Indiana 46250. For
the name of your nearest
Uniden® Satellite distributor, call (317) 842-8555.

uniden

Commercial Communications

Marine Communications

Personal Communications

Satellite Technology
Telecommunications



#### PAGE 46/CSD/12-84



Let's dig into the downconverter area briefly. Remember that in a multiple receiver 'system,' cable inter-connected, every receiving location in the home (apartment complex, condo, motel, etc.) is depending upon the operational integrity of that downconverter for its performance. Let's also remember that even within the same brand and model, there is apt to be some considerable variation between the performance of downconverters. This is especially true with the lowprice-end equipment one finds on the marketplace. As the prices go down, the standard of quality for the low-end equipment begins to vary abruptly unit to unit. You may find one really superb downconverter (i.e. a downconverter with exceptional low noise performance) in a shipment of 12. All 12 work (more or less) but one really stands out as a super performer. Does it not make more sense to stick that particular one aside, to be used in an installation where multiple receivers will be connected to the cable distribution system, than to 'waste it' on a single receiver installation in a home? Of course it does. And that should suggest to you that lacking refined test equipment, there is a 'culling' you can and should do before you go into the field to install a multiple receiver system. Go through and routinely checkout the performance of every BDC (downconverter) you receive setting aside those that perform in an extraordinary way. And save those for multiple-set installations.

There is another possibility as well; if you are selling multiple systems using the low-end BDC receivers (Janeil, Locom, Anderson), you are presently buying **their** companion low-end BDC 'downconverters' as well. **Suppose you did something else**; such as set out to look for a **higher grade of BDC** which is frequency compatible with the low-end receivers? Remember, there is **only one** BDC in the system. There may be two or 20 or even 200 receivers. Does it not make more sense to select a higher grade BDC here, in this instance? Of course it does (\*).

Back to the weaker-than transponder problem. If we cannot get all of the signals into the 'limiting area' with a hand selected BDC, that leaves us with only one other quick option; get more **carrier** out of the antenna plus LNA portion of the system. And within that area we have two possibilities:

 Make the antenna reflector larger, to capture more signal from the sky, and/or,

2) Lower the noise of the system (remember that we also have the CNR element which is separate from the 'limiting' goal), by reducing the system noise temperature (with a lower noise LNA).

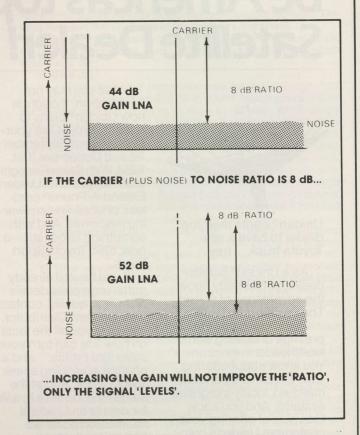
Which is the most viable?

We have a new sub-problem here. The receiver 'limiting' assumes that the only cause of 'degradation' in our weaker transponders is a short-fall in the signal department. Or, that if we somehow had more signal, we would eliminate the noise because the receiver would now be in a safe operating (or 'limiting') mode. That is not always true.

The receiver will go into limiting if there is sufficient (signal) voltage present. Unfortunately, the receiver cannot differentiate between noise and carrier in this situation; you could (in theory at least) get close to limiting with noise alone. That tells us that we cannot solve this problem by simply substituting a 55 dB gain LNA for a 48 dB gain LNA in the hope that the additional 7 dB of LNA gain will increase the receiver signals to the point where they all limit. Is that always true? Unfortunately no.

Let's back up to CNR. If the receiver has a certain minimum requirement for noise-free pictures and you have determined that requirement is 11 dB CNR, in theory you could have noise free pictures on every transponder on every receiver if you left the down-

\*/Within the 430-930 (420-920, 450-950) MHz IF band commonly in use for BDC packages, one BDC unit has been found to have exceptional performance in **CSD Lab** tests. We suggest dealers contact **TX Engineering, Inc.,** P.O. Box 7007, Renton, Wa. 98057 (206/228-5246) for information on their BDC unit. Recently, an LNBC (low-noise-block-converter) package from **LOCOM** (Radio Semiconductor, 315 Benner Pike, State College, Pa. 16801; 814/238-2133) has been introduced and it should be an outstanding performer although no unit(s) have yet been tested in the **CSD Lab**. As additional high quality (but still 'relatively low cost') BDC units become available, we will be testing them and reporting to you in CSD or CSD/2.



converter with a minimum CNR of 11 dB on each and every transponder. **And**, you were able to 'maintain' that CNR in your cable distribution system amplifiers. **CNR is independent of signal level** in the strictest sense; at least the signal level **within** the distribution system.

There are two 'signal levels' at work here; one at the headend, and one within the distribution system. It works this way.

- 1) CNR establishes whether a particular transponder is noisy or clean. CNR is 'set' or established between the antenna+LNA+downconverter. Whatever it is, it is maintained at best (and reduced at worst) within the distribution system. Leaving the downconverter, you can measure a particular signal level for each transponder and that signal level will have some direct relationship to the CNR for that transponder.
- 2) From the downconverter output onwards, the 'signal level' is a function of amplification (or losses) AFTER the CNR has been established for the distribution/cable system. You can have lots of signal 'level' simply by placing 'line amplifiers' after the downconverter. But if you were able to carefully analyze what is 'inside of' that 'signal level,' you might be surprised to find a high percentage of noise mixed in with the signal. In other words, signal may not be pure signal afterall.

This is not exclusive to the 'after downconverter' portion of the system. It is possible even before the downconverter to have lots of satellite 'signal' but still have a poor (or noisy) CNR measurement. How's that?

It comes back to the LNA selection. The LNA has two important considerations; its noise figure or factor, and, its gain. The noise factor is measured by the noise temperature of the LNA; i.e. 100 degrees (Kelvin). The gain is measured in dB; i.e. 44 dB gain. If you have 'weak pictures,' there is a dual **possibility** of solution here:

 Perhaps the pictures are noisy because the LNA is not providing enough signal 'gain' to make the downconverter work properly. The solution is an LNA with more gain (i.e. from 44 dB to 50 dB). Perhaps.

2) Or, maybe the pictures are noisy because the input signal to the LNA is itself so weak that the noise of the system (i.e. the

SMATV-BDC/ continues on page 50



# THE STORY ! THE STORY OF ! OF TVRO/ ! TVRO/

LONG SHORT FORM FORM \$75 \$15



CSD'S ANTHOLOGY/the first 24 issues bound in two sturdy reference volumes totaling more than 1,000 pages of TVRO dialogue! This is the "scholar's edition," every fact, every story, every detail of the early growth of an industry. This is the student's edition, hundreds of pages of basic text explaining how feeds, LNAs, antennas and the satellite system works. If you have been confused by the complex world of TVRO, this is the set for you. There has never been so much information, hard to find, detailed information explaining the TVRO technology and world, bound together in two volumes before. If you need to know more than surface facts, if your world is not complete unless you have ALL of the detail and ALL of the facts, CSD ANTHOLOGY/ Volumes 1 and 2 is what you have been searching for. There is no substitute for in-depth reporting, carefully explained technology, hands on learning. CSD ANTHOLOGY has all of this and more and the price for this amazing 1,000 (plus) page reference set is surprisingly low; just \$75 (US funds) for worldwide delivery.



CSD's 'Fifth-Birthday-TVRO' issue (October 1984) . . . telling the story of how the TVRO industry evolved, developed, and fought its way into the billion-dollar consumer world. Where the equipment came from, where the rules and regulations came from, how the industry leaders developed. This is the full story of all of the major points as our technology and industry developed. From \$36,000 home terminals in 1979 to the \$995 home terminals of 1984; from 16 foot dishes that did NOT move to 4 foot dishes that blend into the roofline. From \$3,000 LNAs to \$99 LNAs, the trials and tribulations and the big events that shaped and created an industry which many believe will become the-number-one consumer electronics industry of the late 1980's and 1990s! If you want all of the important facts, and an easy to use industry reference book, this special CSD Fifth Birthday Issue is for you. And the price is right; 180 pages, \$15 shipping charges paid. worldwide.

#### **GET ME THE STORY!**

SEND ME 'The Story Of TVRO'/ Showorldwide shipment enclosed.	ort Form (October	1984 special issue	of CSD); <b>\$15</b> in	US funds for
worldwide shipment enclosed.				

SEND ME 'The Story Of TVRO'/ Long Form (CSD Anthology/ Volumes 1 and 2); \$75 in US funds for worldwide shipment enclosed.

SEND ME BOTH 'Short Form' and 'Long Form' STORY OF TVRO for special package price of \$85 (US funds) for worldwide shipment.

NAME \_

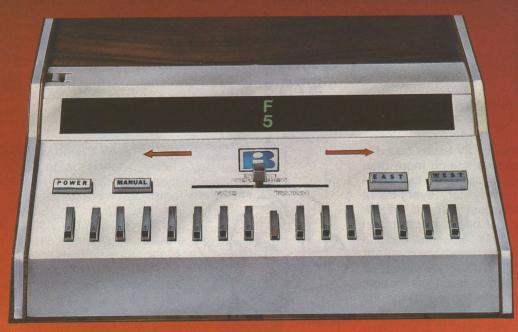
Company (if applicable) Address (must be street/ no P.O. boxes please!)

Zip \_\_\_\_\_ Country \_ City\_ State \_

> MAIL order with payment ENCLOSED, or, use VISA/ Mastercharge by calling 305-771-0505 weekdays be-

■ CSD Magazine P.O. Box 100858 tween 9 AM and 4 PM eastern. Ft. Lauderdale, Fl. 33310

# Safe & Simple



## 5 Year Warranty



In a world of complicated and temperamental dish drive systems, it's nice to know that some things remain simple. And dependable. One of these is **MARKSMANO** motor drive and control system from Boman Industries.

#### It's easy for you. - Plus total safety.

The control features a lock-lamp system designed to make programming simple. That means you'll save installation time. And its circuit design prevents memory loss due to power failure. The 36 volt motor drive features two adjustable limit switches for safety, 1500 lb lift capacity, and complete water sealing. That means you'll save service calls.

#### And it's easy for your customer.

Interchangeable, illuminated index tabs correspond to sixteen programmable selector switches, making this control extremely easy to comprehend, and even easier to operate.

So, why not make life a little Boman Industries easier for yourself, with the model AMC101/460 motor drive and control system from Boman Industries. It's simple, and it's dependable.





## Satellite Stereo TV



In spite of its modest price, the Built-in Stereo Processor SR-1500 delivers video performance that can challenge any • Narrow/Wide Selector receiver on the market. And, it delivers STEREO sound for less than most monaural units.

This exceptional value is augmented by a list of features that makes a powerful statement about marketability.

- Matrix/Discrete Stereo Selector
- Stereo A & B Slide Control
- Vert/Horz Push-Button
- Skew Slide Control
- Format Push-Button
- L.E.D. Signal Strength Indicators
- AFC Push-Button
- Video Invert Push-Button
- Slide-Rule Tunina
- TV CH 3-4 Modulator
- LNA/Down Converter Voltage-Retained

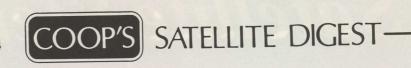
And, the attractive slender design of the SR-1500 will make it a welcome addition to any family entertainment center.

Boman Industries





CALIFORNIA, Uni-Sat Communications, Los Angeles, (213) 923-7814; GEORGIA, Kelgo International, Atlanta, (800) 241-8189; ILLINOIS, Star Scan, Springfield, (217) 523-8233; INDIANA, C.V.S. Systems, Inc., (317) 662-0037; LOUISIANA, Satellite Earth Stations, Covington, (800) 654-9144; Satellite Earth Stations, Mamou, (800) 762-2110; MINNESOTA, Sky Vision, Inc., Fergus Falls, (218) 739-5232; MONTANA, Paramount Satellite, Missoula, (406) 728-0647; MISSISSIPPI, Sunbelt Satellite, Oxford, (601) 236-5517; MISSOURI, Star-Com Distributing, Jefferson City, (314) 893-6666; NEBRASKA, Hastings Antenna Co., Hastings, (402) 463-3598; NEW YORK, Sat. View Dist., Bridgewater, (315) 822-6532; Satellite Video Services, Inc., Palenville, (518) 678-9581; OHIO, Satellite Sales, Inc., Worthington, (800) 521-6136 (in OH), (800) 345-5527; OKLAHOMA, Star-Com Distributing, Oklahoma City, (405) 672-9617; OREGON, I.S.S., Portland, (503) 297-3713; PENNSYLVANIA, Kelgo International, Pittsburgh, (800) 321-0600; TENNESSEE, Lewis Electronics, Humboldt, (901) 784-2191; TEXAS, Sunbelt Satellite, Arlington, (817) 861-5881; Satellite Earth Station, Austin, (800) 252-3457; Star Com, Big Spring, (800) 351-1426; Nampa Satellite, Houston, (800) 421-8300; UTAH, Video Link, Salt Lake City, (800) 762-8876; WISCONSIN, Delta Satellite Corp., Cedarburg, (414) 375-1000; CANADA: BRITISH COLUMBIA, Terrco Corp., Vancouver, (604) 877-1391; Banvil Ltd., Port Coquitlam, (604) 941-9491; MANITOBA, Banvil Ltd., Winnipeg, (204) 633-9345; ONTARIO, Banvil Ltd., (416) 878-8181; Sigmacom Consumer Products, Whitby, (416) 666-1661; QUEBEC, Banvil Limitee, St. Leonard, (514) 327-3783.



#### SMATV-BDC/ continued from page 46

antenna noise **plus** the LNA noise) is too high. Increasing the gain of the LNA will increase the signal, **and the noise**, in the same ratio. The solution here is a lower noise LNA. Merely increasing the 'gain' will not resolve the problem.

There is a third possibility, discovered after you have reduced the LNA noise temperature to its reasonable limits (such as a 70 degree LNA) and increased the LNA gain to its reasonable limits (such as 52 dB); and, you still have noisy pictures on some transponders. The antenna gain.

If the antenna is simply not producing enough signal (or, is producing too much noise; either one is possible), the ONLY way you can clean up the system performance is to increase the antenna gain and/or reduce the antenna noise contribution (measured as

CARRIER 16 18 10 TRANSPONDERS IF THE CNR (CARRIER + NOISE TO NOISE IS TOO LOW ON SOME TRANSPONDERS (8. 10 20 IN EXAMPLE) 16 18 NOISE ... A LARGER HIGHER GAIN ANTENNA CAN INCREASE THE CARRIER (C)... 16 18 ...OR REDUCE THE NOISE (N) WITH A LOWER NOISE LNA antenna noise temperature, or G/T; Gain over Temperature).

All of this is pretty basic but it becomes more-than-basic with a multiple receiver system with a dedicated dish fixed on a single satellite. If the customer has one receiver (or one main receiver with slaves which are used simply to extend 'control capabilities' of the system to additional rooms within the same home), and an antenna 'mover,' the customer is apt to accept that on some transponders on some satellites, there will be a less than perfect picture. The multiple-home system, sharing a common antenna, will be less forgiving of the performance of the system if 3 or 6 out of 12 channels offered have noise. "I thought satellite TV reception was 'perfect' " the dealer hears. "Yes, but . . ." is probably not an adequate answer. Not when you have limited the customers to a relative handful of channels to select from and you have removed their ability to drift around the orbit belt with an antenna mover.

So it comes back down to the integrity of the antenna system, and the way you design performance into the 'headend' so that all receivers connected to the common antenna enjoy the same, high quality, reception on all of the transponders provided.

**HEADend Is The Key** 

The design of the headend, the selection of an appropriate antenna, LNA, feed, and downconverter then becomes far more important in a multiple-home, shared antenna (BDC) system than it does for a single home with shared receivers. First of all, rather than having 'one customer to satisfy' as with a single home system, you will have several. Some of those agreeing in principal to paying a pro-rata share for connection to the system may not be as enthusiastic as others agreeing to the system. They will be 'looking for' reasons to complain (some people are like that, naturally!), a reason to get a 'discount' in the price, or a reason to 'back out' of the deal. The intelligent dealer should expect this to happen, and be prepared in advance by making sure his system is flawless to begin with. The difference, in dealer price, between an 8 foot dish and a high performance 10 foot dish, is relatively minor when the performance improvement serves to keep 'natural complainers' from beefing about the quality of their service.

The same holds true for LNA selection, as well as downconverter selection. And it all boils down to both customer satisfaction, and, something called distribution system degradation.

Virtually every distribution system will require some number of system amplifiers; a point we looked at in some detail in our last month's installment. Each amplifier is a 'station' within the system which can (and will) degrade the performance of the service. An amplifier amplifies or boosts the signal voltage (or level) while at the same time it is adding a measurement amount of degradation to the picture quality (i.e. CNR). Every amplifier does this; it is an inescapable fact of 'amplifier life.' This degradation increases in direct proportion to the number of amplifiers in the system. One amplifier reduces the CNR by 'X' while two amplifiers reduce the CNR by '2X.' Four amplifiers reduce it by '3X' and eight amplifiers reduce it (the CNR) by '4X.' In other words, each time you double the number of amplifiers in the distribution system, the quality of the final pictures is reduced by a factor of 'one.'

That simply tells you that **even after one amplifier** you have reduced the performance level (or CNR) of the total system lower than it was out of the downconverter. A picture that has 'some noise' in it at the **out**put of the downconverter (**but ahead of the first amplifier**) will have '**more** noise' in it **after** the first amplifier; noise and other forms of degradation added to the original picture quality by the first amplifier (station). Therefore, we have one more, additional, reason why we must make a special effort to maintain a high quality signal coming out of the downconverter. And that, once again, gets us back to the selection of the antenna, feed, LNA and the downconverter proper.

As with any type of cable distribution system, the performance level of the system is established by the initial performance available at the 'headend'; your antenna plus electronics. There is more to installing a successful BDC 'shared-antenna' system than simply tacking some signal splitters and perhaps amplifiers onto an antenna. The dealer who intends to handle this type of system must keep this in mind if he hopes to be successful in this business area and to keep satisfied customers in the process.

### **BUILD COLLAPSING TRANSPORTABLE** POLE MOUNT

I will do almost anything to avoid digging that three-foot-plus post hole for those single post mounts; or, any footer hole for that matter! I've got a 'bad back' and the ground in our region of the country is virtually always 30 degrees from horizontal and rock-hard. Besides, mixing 8 sacks of pre-mix in a 3 cubic foot wheelbarrow is anything but

For some time we have been working with pipe structures attempting to bypass the 'digging' (pounding, scraping, and prying of the ground), or mixing, forming-up and casting concrete. An alternative installation technique for several applications has been developing and dealers/installers may wish to experiment with it.

Our testing has demonstrated that antenna mount posts can be rigidly, 'inexpensively' and more quickly braced plumb, in or on the earth, at almost any walkable ground inclination. The alignment for 'plumb,' even on inclined ground, can be done in as little as 30 minutes

The structure, in its least complex form, is simply a tri-pod (three legs with braces extending from the center vertical post). The number of leg-braces radiating from the center which we recommend is six (making it a 'sex-pod' I assume). The photographs and drawings here show the basic support structure with its labeled parts.

The legs must be long enough to provide adequate leverage as well as a low center of gravity. Six legs and braces, for example, result in a much stronger installation than three (of each). To begin experimentation, try cutting the leg-pipes to approximately the length of the dish diameter. For example, a 9 foot antenna would have 9 foot leg-pipes and 4.5 foot brace-pipes

Tension bands go around the base-pipe, the leg-pipes and the brace pipes; then they bolt together. These tension bands are heavy straps that wrap around the pipes. They have drilled (and boltedthrough) 'ears' or 'wings' that protrude away from the pipe.

Staking down the leg-pipes can help maintain rigidity and keep the structure from lifting or sliding in a 'healthy wind.' Drive stakes into the ground at about 90 degrees to the leg-pipes and near the leg-pipe outer ends. The stakes should bend over or in some way attach themselves to the leg pipes. The length of the stakes is dependent upon the soil type. Earth augers can be substituted for stakes in some softer soils but then the feet may have to be enlarged by placing pads under them to support the weight of the full structure. Try replacing the stakes or earth augers, for example, with sand bags or other weights (such as those 'deadman' sacks of concrete that 'go off' on installers once in a while). Dry concrete can be poured into a sack, molded around leg-pipes and rail posts and then wet down in the desired

In about ten minutes time two people can bolt the device together

Vince Kelly Videosat, Inc. P.O. Box 449 Prescott, Arizona 86302 (602/445-0383)

with 3/8" x 1-1/4" bolt sets. After the first set-up, only the base-pipe tension bands will require rebolting around the individual base-pipes. Each leg and brace can remain bolted together and folded. Successive set-ups require only wrench tightening of the leg-pipe to the brace-pipe tension bands.

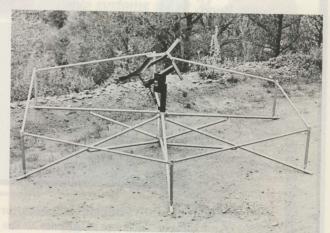
Now for the applications:

1) Armed with a recommended six-leg brace set, base pipe, weights or stakes (plus the dish and mount), a person could exhibit in a local or regional application with a minimum of fuss and with a far better chance that the installation will stand up in an unexpected

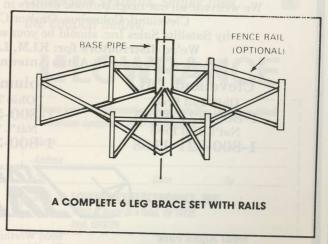
2) A dealer can use this type of installation for short term rentals or system-leases eliminating the fear that it may be difficult to remove the system (because of concrete-set mounts) if the rental or lease comes to an end prematurely.

3) The combination of the bracing system plus a common holedug' system would allow the dealer to use the bracing system to make a standard 'poured installation' using concrete. The bracing would supply the support for the dish and the system would be operational even though the concrete had not 'set.' Days later, the dealer could come back to retrieve his bracing system after the concrete had properly set.

The brace set cost is comparable to a few bags of quick-set concrete. It can be used and re-used hundreds of times and by eliminating two separate trips (one to dig a hole and set the post; the second to do the actual installation) the dealer begins saving from the first such installation



BIG GRABBER. With the central antenna support system and the ground bracing materials, you have a system that sets up quickly and safely.



# WELCOME TO THE



# NEIGHBORHOOD.

Grand Rapids
96 miles

South Bend 62 miles

Chicago 159 miles

Milwaukee 210 miles

Lansing 62 miles

Coldwater, Michigan

Cleveland, Ohio

Columbus, Ohio

Toledo 90 miles

Indianapolis
188 miles

Ann Arbor 80 miles

Detroit
108 miles

Ft. Wayne 62 miles

Mileage figures are approximate distances from Coldwater location.

We've done it again! The quality distributor of TVRO products has just opened our third location.

And we'll be welcome neighbors to the five state area of Michigan, Ohio, Indiana,

Illinois and Wisconsin. At our newest home in Coldwater, Michigan,

we are no more than a short drive or one-day UPS delivery to anywhere in the five state region.

Our new office/warehouse facility is fully staffed with competent sales personnel.

We welcome all our neighborhood dealers in Middle America to drop by one of our homes . . .

Cleveland, Columbus, Ohio or Coldwater, Michigan. See for yourself why Satellite Sales Inc. should be your source for quality products and expert service.

Columbus, OH

We're distributors for: KLM, Luxor, Drake, California Amplifier, Tracker, Chaparral, Astro Antenna, M/A COM, Prodelin, Hero Antenna.

Cleveland, OH
Ohio Toll Free
1-800-321-1245

Nat'l. Toll Free 1-800-321-1188 Ohio Toll Free 1-800-521-6136 Nat'l. Toll Free 1-800-345-5527 Coldwater, MI
Michigan Toll Free
1-800-647-1475
Local & Out-of-State
(517) 278-7574



688D Alpha Park Cleveland, OH 44143 6955 Worthington-Galena Rd. Worthington, OH 43085 405 N. Willowbrook Rd. Coldwater, MI 49036

# LOWRANCE ADDS A NEW WORD TO BLOCK CONVERSION:

When we introduced

our System 70 satellite receivers, we quickly gained an industrywide reputation for unmatched quality in both



video and audio. Now, Lowrance translates that same quality into multiple system capability with our new System 70XB and System 70SB block conversion receivers. These are full-featured receivers that are so versatile they can be used for 4 or 12 GHz

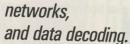
Our LBC-70A block converters are dielectrically stabilized for virtually no drift



(+/- 900 kHz). Distribution systems include amplified splitters for zero splitting loss, low loss connectors and dual polarity switches for 24-channel residential applications. All pass DC voltages for the LNA.

The result is easy installation and studio quality audio and video - video so superior that it is approved for data decoding by Reuters, the international news agency.

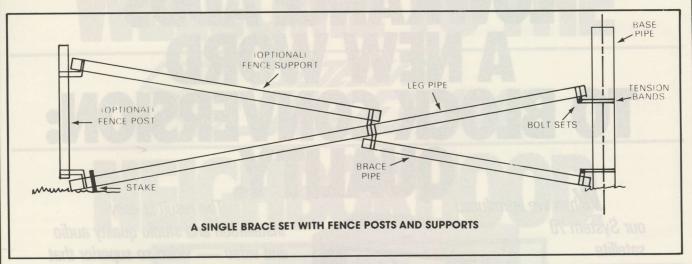
Lowrance block receivers are ideal for small private cable systems, 12 or 24 channel residential multiple receiver systems, 12 GHz. business



For more information on installing all types of quality block conversion systems, simply mail the coupon below.

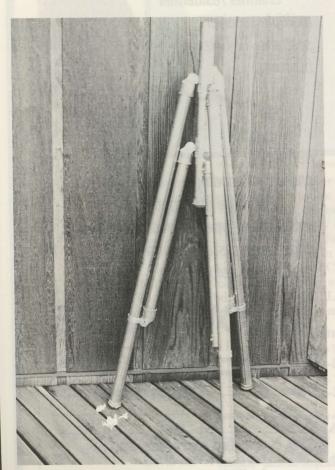
## **L'LOWRANCE**

Conversion equipme	ent in all applications	lling Lowrance Block
Name		
Address		
City	State	Zip_
MAIL TO: LOWRAN	ICE ELECTRONICS	INC.



4) Using this system, a test system can be installed without having to compromise the location. Many trailer-mounted rigs are parked where there is access. Using this system, you can test (for TI or simply performance or clearance) in the **actual spot** where the final installation is intended to go.

5) Systems with 'temporary bases' could be sold or rented to the more nomadic people such as those attached to the military. Many sales are lost because people cannot get permission to make a permanent installation in the yard of a rented facility. This solves that problem.



FOLD IT UP and take it with you. Collapsed for hauling, the basic 'master system' less the needed ground support bracing.

**6)** Winter installations can be done more easily on frozen ground using this approach.

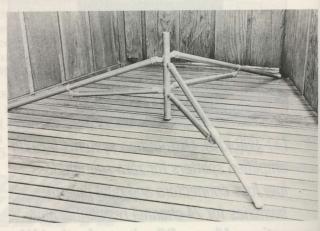
7) Connect the feet of a tri-pod brace-set with three pipes positioned in a shallow triangular concrete-filled trench. This post support method would require less depth of the base pipe hole and/or require less of a concrete pad.

8) Drill and bolt short pieces of large angle iron to the three (or more) tensions bands to adapt the base to a roof type of mount.

I believe this 'structure' may well become a handy 'tool' for a dealer's inventory. It should save dealers time and money and because there are so many possible applications, the rather modest costs involved are quickly returned to the dealer.

One of the best features of the system is that the materials required are found in common stock at chain-link-fence firms. We have used the Schedule 20 and 40 relatively thick wall pipes for our base pipe, legs and braces. The final structure remains portable even for a large-dish structure (one man can carry two or three pieces at a time or two people in reasonable 'condition' can lift and carry the fully bolted-together structure). Thin-wall pipe can be used for the optional 'fence posts,' supports and rails. All pipe diameters are dependent upon their lengths. Common pipe sizes include 1-3/8", 1-5/8", and 1-7/8" OD. Some of our demonstration versions have rail ends and end caps; that's 'fence talk' for a clean appearance. Note that if end-bands are used in place of tension bands and without rail ends, 3/8" spacers should be used.

**Finally,** if you cannot locate the materials mentioned here at a local fencing supply, Sears (and others) sell some pipe parts through their catalog sales. VIDEOSAT, Inc. can also supply general plans or pipe kits for experimental applications. Custom systems can also be supplied engineered for specific applications.



EXTENDED after transport. All materials are commonly found at your friendly local chain link fence company.



# 50% IS FAILING

CSD/2 is a great publication. It reaches virtually every active TVRO dealer in the United States, AIRmail, in the middle of each month. And it has the shortest editorial 'turn-around' time of any publication in the field; a true 'rapid-deliverynewsletter.' BUT CSD/2 is only half of the story; for on the 1st of each month there is CSD, the oldest and the original TVRO industry trade publication. If you are receiving only CSD/2, you are getting only half the issues of CSD; and far less than half the full information you need to be a 'survivor' in today's TVRO dealer world. CSD/2 is a streamlined version of CSD; the grand-daddy of all TVRO publications. CSD leans heavily on the technical and marketing trends of our industry, concentrating on in-depth reports dealing with everything you need to know to survive in today's TVRO dealer-place. So we urge you to get the full story, not just the 50% that comes 'easy' in CSD/2. Place your subscription today using the convenient form below or have your Master/Visacard handy and telephone CSD per the instructions

— SEND ME 24 ISSUES OF CSD (with CSD/2) for one year via AIRmail to my US (zip coded) destination; \$7 US funds enclosed.	75 in
CANADA/MEXICO: \$85 enclosed in US funds; send me 24 issues of CSD (with CSD/2) for the next 12 months	the

OUTSIDE US/CANADA/MEXICO: \$100 enclosed (in US funds); send me 24 issues of CSD (with CSD/2) for the

NAME COMPANY (if applicable) \_\_\_ ADDRESS \_

\_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_ COUNTRY \_ TOWN/CITY \_

#### **INSTRUCTIONS:**

- 1) Complete form if ordering by mail
- Enclose full payment made out to 'CSD Magazine' in US funds
- 3) Mail to: CSD Magazine, P.O. Box 100858, Ft. Lauderdale, Fl. 33310
- 4) OR: Have Visa/Mastercharge card handy with card number and expiration date, and telephone 305/771-0505 weekdays between 9 AM and 4



HIGH PERFORMANCE LOW COST BLOCK CONVERSION RECEIVERS

FOR SINGLE & MULTIPLE TELEVISION SYSTEMS • BUILT-IN MODULATOR • WIDE RANGE AGC • DUAL CONVERSION • SELF-SEEKING AUDIO • VIDEO & AUDIO OUTPUTS ONE YEAR WARRANTY • PATENTS PENDING



### ANDERSON SCIENTIFIC.INC.

Alabama, Electronic Supply Company, Mobile, AL 205-478-0455; Long's Electronics, Birmingham, AL 800-633-4984; Arkansas, Odom Antennas, Inc., Beebe, AR 501-882-6485; California, Teknasat, Stockton, CA 209-464-5870; TransVision Corporation, Greenbrae, CA 415-924-6963; Echosphere West, Sacramento, CA 916-381-5084, 800-338-5478 (CA); National Satellite Distribution Center, Anaheim, CA 800-525-5959; Cciorado, Echosphere Corporation, Englewood, CO 303-761-4782, 800-521-9282 (CO); Iowa, O'Rourke Brothers Distributing, North English, IA 319-664-3768; Kentucky, Video Electronics, Louisville, KY 502-969-1810; Missouri, Skywalker, Wentzville, MO 800-351-9006; New Mexico, Symtel, Albuquerque, NM 505-345-4584; Oklahoma, Alpha-Omega, Idabel, OK 405-286-7116; South Carolina, Quarles Satellite, Greenwood, SC 800-845-6952, 800-922-9704 (SC); South Dakota, Halvorson Distributing, Yankton, SD 605-665-1240; Tennessee, Echosphere East, Knoxville, TN 800-223-1507, 800-421-9935 (TN); National Micro-Dynamics, Chattanooga, TN 800-845-0813; Texas, Echosphere S.W., Dallas, TX 214-630-8625, 800-521-9282 (TX); K & M Resources, Mathis, TX 512-547-3278; Video Signals, Wallisville, TX 409-389-2214; Utah, National Satellite Distribution Centers, Midvale, UT 801-566-5532, 800-525-5959 (UT); Wisconsin, G.M. Popkey, Green Bay, WI 414-437-5445; Delta Satellite, Cedarburg, WI 800-558-5582; Canada, Satellite Engineering, Scarborough, ONT 416-292-9500; Nedco, Mississauga, ONT 416-677-1410

### **TRANSPONDER** WATCH

#### RECENT REPORTS OF ACTIVITY ON **DOMESTIC / INTERNATIONAL** SATELLITES

Send your reports to CSD Transponder Watch, P.O. Box 100858, Ft. Lauderdale, FL 33310. For late news, call (305) 771-0505.

SPACE produced and paid for distribution of DEF (direct electronic feed) news story reporting on Presidential signature for legislation legalizing TVROs late in October. 'Piece' featured Rick Brown, Congressman Rose and went to TV stations interested in story. Tulsa (Oklahoma) station, alerted to DEF feed by **Automation Techniques** built local story around bill passage mixing interviews with local cable and broadcast interests against AT spokesman. Exellent consumer coverage for an important document.

CBS Evening News 'piece' October 17th addressed widespread growth of home TVROs, focusing on systems in Kentucky/West Virginia serving typical homes where terrain makes normal terrestrial service impossible. It ended in upbeat manner reporting on adoption of legislation by Congress authorizing terminals but left unanswered HBO 'question' of viewing payment.

FCC moving straight ahead on 2 degree spacing 'threat' for C band birds in North American domestic 'arc.' New committee formed as 'advisory' will decide how and where the bird's present 3 or 4 degree spacing will be tightened up.

LOS Angeles (Ca) City Municipal Code apparently makes installation of TVRO illegal without advance permission in form of electrical permit. City has permit process closely following NEC (National Electrical Code) designed to insure that 'outdoor wiring' does not endanger lives. SPACE working on situation and installers facing problems should contact SPACE for assistance (703/549-6990).

IT is now illegal, under U.S. law, for TVRO systems to 'lift' international satellite feeds for rebroadcast (via air or cable) without special permission. 'Loop hole' was closed with Senate ratification of Belgium treaty adopted at international level some ten years ago.

TWELVE Ku band channels now operating in Europe on combo of ECS (1) and Intelsat V birds with three additional video services planned by 1 January. Four of total are on Intelsat spot beam. Countries now active include Great Britain, France, Germany, Italy, Netherlands. Four of present 12 are scrambled, 1 of new channels due up will be scrambled.

DBS operators, whomever they may turn out to be (at 12 GHz), have green light to 'cooperate' to establish transmission and reception 'standards.' DBS has had many problems including previous failure of participants to 'get together' to adopt standards which would lead to equipment compatibility between competing services. Department of Justice has granted special permission for participating firms to 'work together' in this area.

CARIBBEAN nations getting early start on next round of WARC meetings which will formulate policies for distribution of video and other (narrow band) services over western hemisphere.

FRENCH operated Ariane launch system has won contract to launch third Australian (Ku band) satellite with launch date set for August 3, 1987.

BIG buck 'insider' trade press discovering TVRO industry, albeit inaccurately. 'Satellite Week,' not the program guide, distributed for \$400 plus per year to monied clients weekly, carried feature on TVRO 'boom' early November 'reporting' installation of 'one-millionth terminal' recently. Story called STTI 'trade association,' made significant errors in reporting on hardware status and size of industry but was generally 'upbeat' regardless of errors.

HOLIDAY Inns, which pioneered 'movies in rooms' using C band and HBO package in 1978, has new plan; a Ku band service of approximately 6 channels. The present 300-hotel-plus 'network' is growth-limited by C band TI problems and Ku will allow balance of hotels (1,200) in management network to add in-room services. Participation will include Showtime and/or The Movie Channel, ESPN, CNN, possibly others plus 'pay-per-view' channel featuring current theater release movies.

SALES of C band commercial and semi-commercial systems falling off causing some manufacturers in that field to explore sales in home TVRO arena. Cable market has softened, broadcaster market is saturating and next growth area for big buck terminals will probably be down road one or two years in Ku field. In interim, C band 'home style' terminals offer market possibilities along with 'SMATV' systems. Look for more competition in both during 1985.

NASA buying 15 terminals in 9 meter region for C band transponder link-up across USA using August 1985-scheduled American Satellite Corporation bird

BRAZIL has enacted legislation authorizing 'private TVROs,' apparently first South American country to do so. However, legislation points at 'home-grown' industry making it difficult for foreign electronics or antennas to be imported unless special permits or 'waivers' are granted. TVROs there may receive US, Russian, South/Latin American signals for 'private use.' Rebroadcast, through air or cable, prohibited

SOVIET LOUTCH 12 GHz (11.7) satellite signal radiating from 14 west leading to conclusion that Russians replaced 14 west Gorizont satellite with new bird around 1 September. Signal appears to be in 46/47 dBw region in northern Europe, 'equivalent to Intelsat V spot beam.' No video noticed to date; only test signals. Coverage of signal also unknown but European spot beam suspected.

ADVERTISING on HBO one 're-invented' possibility getting consideration as premiere home movie service is struggling to find ways to get dollar revenue back up. HBO growth cycle has leveled off, causing considerable speculation about cable's ultimate 'penetration' in suburban and urban markets.

DBS planners for 12 GHz also studying possible 'marriage' of premium movies with between-feature-advertising as 'necessary evil' to get services off of ground. They, too, are concerned about turndown in HBO rate of growth during 1984.

FRENCH TDF-1 bird, their first 'DBS' effort, now pushed back to mid '86. French TWTs are at root of problem after failure of Japanese three-channel-bird TWTs earlier this year. French firm built Japanesebird TWTs and French don't want repeat of Japanese failures. Getting 100 watts (or more) of reliable (TWTA) power at 12 GHz still remains elusive

SARSAT program, allowing exact pin-pointing via low earth orbit satellites of downed planes or ships in trouble. US birds cooperating with Russians in program have failed leaving only Russian birds in program. US plans to replace satellites not clear long term.

BRITAIN still 'keen' to get 'early launch' of English DBS program into high gear but plans continue to flounder. Tentative decision target-date of 1 December for latest planning stage.

SWITZERLAND scheduled to hold national vote on 'DBS plan' December 2. If voters approve concept, planning will proceed for



Swiss DBS package of some sort.

FRENCH Telecom 1 bird, scheduled for operation from 8 west, still 'rumored' to be attempting to sell direct cross-Atlantic service to U.S. International firms. French deny or put down 'story' although brochures describing commercial service apparently were printed. Meanwhile, Telecom 1 status uncertain although launch of bird was more than four months ago. To mid-November, no 4 or 12 (11) GHz signals have been noted from bird leading to speculation French are either 'warehousing' bird awaiting development of commercial plan, or that bird is being tested in orbit location other than assigned 8 west.

SCIENTIFIC-Atlanta used New York City press conference to announce sale of their B-MAC video standards system to Australian Ku band service package. S-A is attempting to get B-MAC adopted as 'next generation transmission standard' although it has already been largely turned down in Europe where it originated in English labs.

USCI failures being analyzed in wake of virtual collapse of firm. Apparently present 'subscriber universe' is around 10,000 homes after more than \$40,000,000 was spent promoting service in Indiana, Maryland, Pennsylvania. With failure of USCI plus failure of Japanese 3 channel Ku band satellite earlier this year, marketplace for 12 GHz low cost (i.e. home) systems has all but disappeared on 'moderate to large scale.' Firms originally tooled to provide hardware (mostly Japanese) have turned to equipment-glutted 4 GHz (US) C band arena to unload microwave hardware futher depressing pricing for C band parts as well. 1985 will be 'another' year.

INTELSAT V (Flight 9) bird, mis-launched this past June, has re-entered atmosphere and burned. Plans to attempt salvage of bird never matured and insurance in excess of \$100M to be paid.

M/A-Com will supply approximately 1,000 Ku band terminals to Australia using 1.2 meter stations to recover Ku band audio and data transmissions. Primary users will be Australian news networks and financial community. Systems will operate from new Australian 12 GHz Domsat birds scheduled 1985.

SKYchannel service for European cable has expanded its weekend broadcast day from 8-1/2 to 11-1/2 hours.

JAPAN espousing new 'freedom' for Japanese cable entrepreneurs to 'innovate.' Immediate plans seem to include satellite distribution of cable TV programming, as is done in US, with extensive home video explosion forecast through 1990s. 'Fallout,' in regions surrounding Japan in Southeast Asia, is expected to be substantial although language for early Japanese-only broadcasts will be a barrier to widespread use elsewhere.

US SPACE weather watch program built around GOES series satellites, in even deeper trouble. GOES 1, reactivated last fall because of failure of later series satellite, has now also failed leaving only single GOES bird at 98 west (GOES 'Central') operational. No 'immediate' help in sight.

GDL, Luxembourg 'on again' and 'off again' DBS plan to coat Europe with up to 16 channels of multi-language international TV fare, back 'on again.' Politics, largely originating in France but supported in other European centers, battling to keep GDL from getting off ground. It is unlikely that GDL, if it works, will be operating much prior to 1990 under latest announcements.

AVANTEK apparently has landed 10,000 LNA order from Equatorial Communications for 2 foot size C band spread-spectrum earth terminals

J.C. PENNEY plans a 12 GHz 'network' to allow all stores to view new merchandise and promotions at same time. Private Satellite Network, Inc. will operate the system.

KOREAN and US 'business interests' was subject of special international satellite teleconference exchange carried early November by U.S. Chamber of Commerce.

FEDERAL EXPRESS wants to extend 'Zapmail' to Europe via Belgium and Great Britain. Zapmail is 'instant' transfer of documents via teletext or facsimile using satellite interconnect. Fed-X has ambitious 50,000 terminal plan for US market now underway.

SPACE and STTI will do planned July '85 show as 'joint effort' at Orlando location. Original agreement had SPACE and STTI 'sharing' Las Vegas show in 1985, SPACE doing July show on its own and STTI doing Nashville show on its own in September. New plan is for both groups to jointly conduct three shows in 1985 with likelihood that 1986

# Goodbye to L.

It's here! The TVRO filter that eliminates terrestrial interference problems.

Today, you can install a satellite dish anywhere, without fear of terrestrial interference.

Because even in the toughest installation areas, all you need is the TVRO filter.

Created with advanced state-or-the-art engineering, these PFG-series filters eliminate undesired interference induced by terrestrial communication systems operating in the 4GHz band.

And the TVRO filter is unlike any other filtering method currently available. Using advanced delay line filter technology, superior interference refection is achieved over that of conventional notch designs. All the while enhancing AFC operation and providing a typical gain of 3 dB.

Installation is easy. Simply make an in-line connection between the downconverter and receiver.

Unconditional Moneyback Guarantee.

We're so convinced this is the best filter advancement ever, that we'll return your money if you're not completely satisfied.

The TVRO filter from Earth Station Products. Call Gary Friesz at 606-278-1209 to place your order or for more information.

Don't delay. Once you try this TVRO filter you'll wonder where it's been all along. 2532 Regency Rd. Lexington, KY 40503



## THE ROAD TO SUCCESS IS MEASURED BY SUPERIOR QUALITY

For any business the road to success is long and difficult. But measured by the quality of Superior™aluminum mesh antennas, the road is shortened considerably.

Superior™ high performance antennas are scientifically designed for low wind resistance, light weight and stability in the field. And because we want our Superior™ quality to shorten your road to success, the manufacturing process of our five and one-half, eight, ten, twelve, sixteen and twenty-five foot antennas are monitored by a strict quality control program.

U.P. Superior Satellite Dish Manufacturing. Our Superior™quality shortens your road to success.



1651 17.4 Rd., Escanaba, MI 49829 906-789-1027

Mico Dish Logan, OH 1-614-385-3200 Outside Ohio 1-800-638-1864

**John-Co Electronics** Auburndale, WI 715-652-3175

Satellite TV Systems Marquette, MI 906-228-2324 1-800-551-0551 U.P. Watts

> Buddy's Electronics Live Oak, FL 904-362-4505

Herman Electronics Miami, FL 305-634-6591

National Micro Dynamics Chattanooga, TN 800-845-0813

Stellarview Satellite Surfside Beach, SC 803-238-1098



Vidcom Satellite Rochester, NY 716-225-6130

**Lycon Farm Implement** Palestine, IL 618-586-5246

T & T Satellite Glenns Falls, NY 518-792-4913

Satellite Antenna Systems Houghton Lake, MI 517-366-9419

C-Z Labs Garnerville, NY 800-423-2322

Ultra Satellite Systems Jarrettsville, MD 301-557-8381

**Telsat East** Front Royal, VA 703-636-1777

Bell Services, Ltd. Paget, Bermuda 809-292-4500

#### PAGE 60/CSD/12-84



will see two shows for TVRO industry; only.

**USIA** sent U.S. Presidential debates 'around the world' to some 20 countries using C and Ku band satellites (see pages 60/61, **CSD** for November 01).

**EAVES**dropping on American Shuttle Missions, plus monitoring of U.S. contractors working on Shuttle and other 'sensitive' high-tech areas is concerning White House. Satellite transmission of telephone conversations within Shuttle sub-contractor groups and others involved in space activities are easily tuned-in from Cuba and other

Caribbean/Latin American 'Soviet-friendly' nations. New directive would tighten up security of voice and data transmissions via satellite for **any** space related program.

CABLE television meeting December 5-7 in Anaheim, California should hear first 'formal announcement' by HBO of their plans to market C band home TVRO services. Initial program will concentrate on selling C band services on Galaxy through local cable 'Wide Area Distributors' but using home TVRO dealers for installs and maintenance.

### INDUSTRY AT LARGE

#### CORRESPONDENCE, NOTES, REBUTTALS AND CHARGES...

CSD provides this industry Forum with the understanding that opinions, thoughts and "facts" published are from the writers, no liability for statements extends to the publishers. Address letters to CSD/Industry PO Box 100858. Ft Lauderdale, FL 33310

#### **IDENTIFY MATURITY**

I do share your concern about the future of the TVRO industry and I would very much like to see some indication that we are, indeed, maturing. However, I do not feel that the 'new trend' to place aggressive sales/engineers on the road to call on dealers is a sign of maturity.

Having been closely associated with circuitry design, manufacturing and management of electronic companies for nearly twenty years, I have developed some views on the competence and/or qualifications required if a company is to sustain, let alone grow in the manufacturing and product distribution business. The qualities I see for long-term success are 1) endeavor and dedication, and, 2) management skills and adequate monetary resources.

The supplemental qualifications which must be present in the process of establishing a successful electronics company are:

- Full appreciation by management for the necessity of thorough technical knowledge;
- Sufficient budgets to support the development of technical know-how and to maintain a technical staff fully dedicated to product development and engineering product support;
- 3) Responsible marketing;
- 4) Responsible financial planning and expansion planning.

Ignoring any of the first three items will invariably result in future problems. Yet we have today in our industry a large number of receiver and antenna manufacturers who think they cannot afford the 'luxury' of fulltime engineering staffs. I feel certain that we cannot 'cheat' the R and D budget much longer because our industry is one of the most technically challenging and demanding industries I have ever seen develop.

The true 'maturity' of the TVRO industry will come with the full recognition that every day brings new technical challenges which can only be met by a well equipped staff dedicated to solving those technical challenges. The true 'maturity' of our industry will come when we are technically bright enough to recognize the limitations of physics and the proven laws of electronics. When a firm claims higher and higher antenna gains, for example, I view those claims as a symptom of desperation rather than a sign of technical competence. There is no future in this or any other technology driven industry when we measure 'business success' merely in terms of the high sales volume per employee. The 'manufacturer' of antennas is not merely packaging and expediting parts and sub-assemblies produced by others (often these parts are not manufactured by firms who even know about the TVRO industry). A 'packager of parts' will never by able to adequately 'support' his product in the field. However, for a short while, he will be able to offer his product much cheaper than the

professional competitor who must grapple with routine overhead and the required R and D budget.

The other symptom of manufacturing maturity is to be able to look ahead into the future **without fear**. A mature manufacturer should have the expectation of ongoing and continuous business growth in a growing field such as ours because he will recognize that through his own R and D efforts he will have a steady flow of new products just as he will service his older products with spare parts. A company that recognizes no tangible income from the sale of spare and replacement parts, for example, is missing an important ingredient in business. Such dollar contributions should be measurable and they should signal the company that there must be planning for such product areas in their own budgeting. A firm that reaches this plateau will be well on the way to its own maturity and will be contributing to its own stability into the future.

This is also very closely related to the so-called 'mature design' of a product. Such a design should be able to survive in normal use for no less than 3 and hopefully 6 years without becoming obsolete. It should have a 'service-life' of at least ten years, just as our modern satellites expect to have. To earn this kind of product maturity, the manufacturer has to **earn** his expertise; it cannot be acquired overnight. The testing ground for new products should be in the manufacturer's laboratory and **not** a customer's backyard!

Jan Spisar Spisar Engineering Ltd. RR # 5, 14351 Airport Rd. Caledon East, Ontario Canada LON 1EO

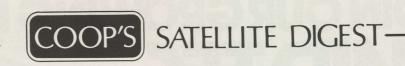
True to himself, Jan Spisar's firm recently accepted a \$100,000 'contribution' from the Industrial and Regional Development Program of the Department of Regional Industrial Expansion in Canada. That money is being utilized, along with funds from Spisar, for the 'development and manufacture of a series of new microwave hybrid-integrated circuits intended for the processing of direct broadcast satellite signals.' Spisar expects to spend \$333,350 on the project creating six new jobs in electronics in Ontario as a result over a three year period.

#### **AUSSAT Update**

The Australian government recently made a pair of announcements concerning the Aussat 12 GHz satellite program. The first announcement was that the B-MAC (Multiplexed Analogue Component) transmission system will be utilized to deliver our ABC (non



#### PAGE 62/CSD/12-84



commercial) television and radio services via (12 GHz domestic) satellite(s). The format will be for a single high quality video programme per transponder plus up to six digital audio channels and a data channel. They have also stated that the system will have the ability to offer teletext services, on-screen emergency warnings, as well as educational and other services through the 'data channel.' At the same time we are just now learning that the cost for a B-MAC compatible earth station will be in the vicinity of \$A1500, plus installation and delivery costs. This will essentially be the system which Scientific-Atlanta has been working on in concert with Plessey in the UK. Local Plessey Australia said they will make available their processor unit to other firms who wish to incorporate it into the 'Homestead and Community Broadcasting Satellite Services' (HACBSS)

Of equal interest was an announcement by the Minister of Communications approving a new 'remote area commercial television service.' The concept is that investors, without government subsidy, will try to create an 'outback' or rural television delivery system. The government will not allow such systems to be operated on a scrambled basis so the subscription approach is 'out.' There are approximately 650,000 residents in 'the out-back' but they are exceedingly spread out over a land mass equal to 3/5ths the entire United States(!). If any of the CSD readers are interested in additional details on these recent Australian announcements, they may contact me

directly.

Olga Sawtell General Manager ACESAT Satellite Receiver Corp. Pty. Ltd. 856 Princes Highway Sutherland 2232 N.S.W. Australia

Olga's firm has supplied approximately 200 TVRO receivers to the growing Australian and Pacific Basin TVRO infantindustry during the past year.

#### **PETER CALVERT Dies**

Old friend Peter Calvert died suddenly October 4th in Edmonton, Alberta of a heart attack. Peter was one of the superstars of the Canadian TVRO industry. He designed S.E.D. Systems' latest generation of 4 and 12 GHz receivers before a brief tenure at Cook Communications. He was most recently Product Manager of Digital Video Systems, a subsidiary of Scientific-Atlanta in Scarborough, Ontario.

At trade shows, Peter had a genuis for waking up seminar audiences that had been left half asleep by preceding speakers. He had few peers as an engineer as I discovered almost exactly one year ago at a 12 GHz site in Yellowknife, N.W.T. He leaves behind wife Brandy and an infant son; Mathew Winston.

Jim Vines 611 Farmview Road University Park, II. 60466

We last saw Peter at the Vancouver show in February. He liked 'his side' of the border and while he followed the U.S. satellite developments closely was best known and most respected in Canada. A sad loss indeed.

#### **FRANCHISE Solicitation**

Enclosed is a news clipping from the Minneapolis Star Tribune concerning a firm attempting to franchise TVRO sales centers. They had apparently begun to sell their franchises inside of Minnesota when they were stopped as the clipping shows.

Lawrence A. Flam P.O. Box 913 Wayzata, Mn. 55391

The clipping reports that the Minnesota Department of Commerce has issued a 'cease and desist order' against Rocky Mountain Systems of Colorado Springs, Colorado. The firm, alleged the State of Minnesota, was attempting to sell satellité antenna dealership franchises in the State of Minnesota and the state had received 'numerous complaints that the company supplied defective products, would not replace the equipment which did not work, and refused to refund dealer deposits.' The state also said the firm refused to respond to written requests, from the state,

for information on the alleged practices.

#### **APPRECIATED**

I wanted to take a moment to congratulate you for all of your fine efforts in honoring (the) special satellite industry pioneers. In conjunction with the "5th Birthday Party" held at the Nashville trade show, these individuals are indeed owed a debt by industry members; good to see notice is at long last coming their way.

Additionally, I was pleased to read in the November issue of Radio-Electronics that Coop now has a regular column addressing the marvels of satellite delivered television. Such a column can only add to educating the populace, thus furthering the growth of our

industry as a whole.

Finally, your CSD Anniversary Issue (October 1984) was an excellent insider's look at our industry from the early days (our "roots!") up to the present growth phenomenon. The encapsulation will be of continued value for many years to come. Well done!!

Rebecca Lang **Advertising Coordinator** Satellite TV Week P.O. Box 308 Fortuna, Ca. 95540

Now if we can make it to ten years. . . .

#### COOP/ continued from page 5

people who wanted a dish 'instantly.' I guess he paid his plane fare to Washington. And having people like that owning dishes can't hurt us as an industry either.

We coagulated into a single group and were led through the innards of The White House to the setting for the ceremony. I resisted the urge to shoot four rolls of film on that walk primarily because Cernan and I had somehow gotten that far without the mandatory badges and security checks. Coming in late, we had been detained briefly at the entrance and then whisked into Coyne's office. The next thing we knew the entire group was headed to 'the Lawn' and we had never gotten the appropriate badges that identified us as special guests. That worried me of course and I didn't wish to make a spectacle of myself by shooting film of every inch of 'The' White House. Having gotten this far, the last thing I needed was to get stopped and bounced out onto the street!

We didn't know, until we walked out onto the lawn and spied the dish, where it would end up. Bishop immediately spotted us and ran over smiling. He told us how it had worked out and I promised never to reveal the details in print. Suffice to say that Al Bishop has many friends at 'The' White House.

Before the President came out on cue, several people including NASA Administrator Jim Beggs and Jack Anderson spoke from the podium. A young lady many of you have seen in the movie 'E.T.', Miss Drew Barrymore, had the honor of reading the 'Young Astronaut's Pledge' and the 23 or so TV cameras on the stand behind me ground away as she got it perfect on 'the first take.' Anderson again impressed me by making it clear that the Young Astronaut Program was a 'private effort' which would be funded by money from corporate sponsors. The model here is the recent US participation in the Olympics. Pepsi Cola, for example, is a sponsor. They will (or have) become 'The Official Drink of the Young Astronaut Program.' Burger-King is another sponsor and later in the day I would overhear McClaskey getting the Burger-King and Pepsi VPs excited with a concept he had where they could work together in promoting the project. It would not surprise me to see Burger-King restaurants offering some sort of 'contest' to their customers involving 'astronaut history,' with Pepsi as a sponsor. McClaskey strikes again.

The biggest corporate sponsor-winner I saw may well turn out to be Commodore Computers. Their people were so excited about the possibilities of inter-connecting tens of thousands of schools each equipped with a Model 64 (or whatever) Commodore computer, via satellite, that they couldn't keep still. They were fairly bubbling with excitement about the marketing 'opportunities' opening up to them. Let's see . . . if we had 100,000 schools equipped with TVROs plus Commodore computers, and each school had 100 members in the

local YAP chapter, that would be 10,000,000 school age students exposed to working with (and playing with) their computers. Yes indeed; they were going to sell lots of computers here.

It should come as no surprise that Intersat signed up as a corporate sponsor to become the 'Official Earth Station Supplier' to the program. Since most of the schools will at least contact the Young Astronaut Program offices before they go out to purchase their TVROs, you can rest assured that these schools will be exposed to Intersat literature at an early stage. Of course just as young astronauts may well elect to drink 'COKE' rather than the official Pepsi, so too may individual school districts elect to purchase a Drake or a Sat-Tec receiver over an Intersat. What they buy, as we explore in our marketing feature December 15th ('Marketing Young Astronaut Terminals') will depend as much on the accountability and aggressiveness of the local TVRO dealer as it will on a recommendation or 'official sanction' from YAP headquarters. McClaskey recognizes this and told me he would be satisfied if Intersat 'gets 40% of the business.' I'd be happy, if I were selling terminals, with 'an order for 40,000 terminals' as well.

I had positioned myself at the end of a row, on purpose. I wanted the 'right angle' for photos and by standing up adjacent to my seat figured I could angle over the tops of the row after row of kids (and their advisors) in front of me with the 300MM zoom lens to close-in on President Reagan. I tried a few practice shots before the President made his formal entrance and it went well. With three cameras freshly loaded with new rolls of 36 exposure film at 1:28 PM, I was ready.

McClaskey came running back. As an 'official sponsor' he had 'bought' a front row seat for himself. He had a problem; the camera he brought was acting up. Could I loan him one of mine? I did and was glad for the opportunity to be able to have two different angles on the President.

President Reagan walked briskly from The White House, past a small army of guys who could never fool anyone about their occupation (Secret Service guys all look like they just finished Marine bootcamp and the stern look on their face is awesome; I'd hate to be responsible for the fulltime safety of the President myself), and to the podium. I pulled off a couple of 300MM shots and as he approached the podium everyone rose. When the applause died away everyone sat down. Well almost everyone. I continued to stand, away from my seat so as to not block anyone's view from behind me, and kept the still

cameras rolling. Briefly.

"Please sit down." A very stern voice from behind me corresponded with a firm hand on my shoulder. I instantly sat down. The Secret Service was on the job. And for the next twenty minutes I leaned up and to the side in my chair squeezing off camera shots whenever the President looked up and that happened to coincide with a parting of the sea-of-heads in front of me.

As suddenly as it began, it was all over. The crowd broke up and in another fifteen minutes only a handful were left. Gene Cernan and I were among those remaining. We had a problem; without the



McClaskey with ABC's Hugh (and Mrs.) Downs.



OFFICIAL CAP with insignia of the Young Astronaut Program is put to work by President Reagan. Intersat's Al Bishop made the cap for the President.

appropriate badges we could not simply walk back to Jim Coyne's oiffice, nor get outside. "I'm afraid we are stuck here until somebody in authority comes along to lead us back, Gene" said I.

The man on the moon smiled. He had been in tougher spots in his life. "Not many years ago I used to run around this lawn in jogging shorts and tennis shoes" he remembered "and nobody ever said anything to me." Being an American folk hero has its advantages; but it is a fleeting advantage only good for the moment. One should savor it when it happens because it might not last forever.

Eventually we were rescued and found our way to Coyne's office. Jim, good to his word, asked if I wanted to do the 'exclusive interview' and I pulled out the cameras and tape recorder and we went to work. You read the context of that in CSD/2 for November 15th. Coyne was an unknown to me early on. I had been told that he had this unusual 'special advisor' post because he had once been an elected member of Congress from his home district in Pennsylvania. I understand how political favors work and I had anticipated a far different breed of person. Coyne is very bright, very articulate, and he carries his position with a sense of dedication and concern which would make him a candidate for CEO in virtually any multi-billion dollar industry in the country. He's good, very good. I remarked to him about this and promptly received a lecture on bureaucracy and how his views coincided with those of the President. He runs his office like a counterpart might run an aggressive corporation in private industry. If we had several dozen people like him handling official affairs, I suspect the Government would be half the size and four times as efficient.

"I almost bought a TVRO several years ago" he remarked at one point. "When I was serving in Congress, my wife wanted to be able to watch the sessions on C-SPAN. Our home cable didn't carry C-SPAN and the dish seemed like the answer. Unfortunately, then,



ANDERSON (on mike) points out E.T. star Drew Barrymore who had read the Young Astronaut's pledge for President Reagan. Hugh Downs on left.

they cost upwards of \$10,000 and I couldn't see spending that much money so she could watch me at work! The timing was off; if they had cost then what they cost now, I would not have hesitated for a moment!".

Re-introduced to TVRO through the Young Astronaut Program, I expect Jim Coyne will have a TVRO shortly. Possibly before you read this. McClaskey and his conveyor-belt business cards again.

We went from the White House in a special van to a reception being staged by the YAP folks at the Hay-Adams Hotel. There McClaskey huddled with the top man at The National Geographic and I wouldn't be surprised if we see something interesting come out of that one. Gene Cernan wanted to drop in briefly to visit a friend from his Astronaut days so we stayed only a short while. Cernan has been involved in promoting American technology overseas and he recently wound down a multi-month exhibit-tour in Japan of the American space program. Gene had put together some of the warehouse-stored 'artifacts' from the American space program and toured three Japanese cities. In each city the Japanese government had erected special buildings to display the extensive exhibit and millions of Japanese had been given the opportunity to walk through and inspect the space machinery. With the Japanese tour completed, Gene was hopeful that before the exhibit materials were returned to the United States, he could take the tour on to some additional Southeast Asian countries. There were a few 'roadblocks' in his way; Washington



A SEGMENT of the 'sea of video cameras' on the rear platform during the White House lawn ceremony. CNN (center) and C-SPAN (behind). The C-SPAN service provided the best coverage of the event.



JACK ANDERSON and Coop discussing the program. Anderson has nine children and he obviously identifies with the concept of introducing science and math to youngsters in their formulative years.

bureaucracy kept getting involved. He hoped his visit to Washington would clear those roadblocks. David and I went along for the learning experience.

"I can clear that for you" the man said to Gene. "But not until after the election is over." Gene and our host had spent months on the road many years ago touring the world with a former US Vice President. The host had been in the military at the time (a multi-star general) and now, retired, he was in private industry based in Washington. He had the 'contacts' required to bulldoze bureaucracy out of the way when the project was right. Gene's project was 'right.'

"I remember when we were visiting Saigon" started Gene. "I was fresh off the moon and I'll never forget how you pulled a 45 out of your coat and laid it on the seat between us everytime we got in your car." The former General smiled. "That was when it was considered a safe place to be; I was back there later when it wasn't so friendly." And he told us a story of an incident that required him to use that pistol to get away from a plotter who had apparently been assigned the task of rubbing him out. Multi-star generals are always 'in-season' in some parts of the world.

With sixty minutes to wait at Washington National for our flights, Bishop, McClaskey and I commandered the television set in the Eastern Airlines Horizon Club and with McClaskey at the controls we switched from local channel to local channel in a hand-operated 'scan-tune' mode searching for some videotape shot that day during



CERNAN, McClaskey and Jim Coyne dialogue on the start-up steps for the Young Astronaut Program in Coyne's office after the ceremony. Full details in CSD/2 for November 15th.

# ODOM. The one the others copy.



Some enterprising people out there have found that it's a cinch to make an antenna that LOOKS LIKE an Odom.

You simply buy an Odom antenna and copy its shape. To save more time and money, you stamp it out with a press.

You certainly don't waste money designing the master plugs from scratch, by computer, like Odom does. Or hand-layering the fiberglass and resins, like Odom does. And why go to all the trouble of flame-spraying a reflective layer of molten zinc, when you can just sandwich in some aluminum mesh?

Your customers can tell you why. Because they'll see the difference. Not by looking at the antenna, but by looking at their TV sets.

Others may try to copy the Odom shape. But they'll never copy Odom performance. And to your customers, performance is what really matters.

Dial 1-800-643-2950 for the facts on Odom's complete line of TVRO components. In Arkansas, dial (501) 882-6485. It's SOME DISH.



COMMODORE already has custom programming created for their 64 series of machines and one display was a computercanned 'sales pitch' designed to get educators involved in the program.

the Presidential events. Virtually every channel had news 'up' and we were anxious to see what the coverage had been. Bishop had already told us that a photo of the President putting on his YAP 'hat' and standing before the Intersat dish had been selected to move as the 'White House Selected A-Wire Photo' for the day. Each day the White House shoots photos of the President or events and selects one winning photo' of the day to be given to the news wire services. This one would turn up on page six of USA Today on October 18th and chances are it was used in numerous other papers as well.

The much anticipated video never appeared; only a brief three second video-only 'bite' shoved into the CBS Evening News made the national networks for the day. That was the same day CBS did their piece on TVRO, featuring installations in Kentucky and the surrounding area. You probably remember it. Days later when I returned to the islands, Marshall would run all of the day's newscasts for me on videotape and we did find several feeds ABC sent on DEF which covered the White House ceremony. Well, at least we had 'some video' of the event from the networks anyhow.

The TVRO industry had surely come quite a distance in five years; almost to the day (October 18, 1979). We had gone from a handful (fewer than 100) terminals and questionable legal status to a ceremony on the White House lawn where the President announced a new program that would ultimately involve as many as 110,000 of our small dish' systems. Not bad for a bunch of guys who started out building microwave stuff in their garages. Boy, would 1985 be a 'neat year'!

#### HBO's Problem(s)

When Home Box Office dismissed (as in terminated) their chief man, **Frank Biondi**, in October most of us knew that something very dramatic was occurring. HBO had virtually nothing to say about the firing of Biondi except to state that there had been 'philosophical differences of opinion' between Biondi and the Board of Directors. Biondi may have been headman at HBO, but he still had to answer to the Board of Directors at Time, Inc.; a tough group I suspect.

The movie and cable trade press was filled with predictions that up to 20% of the HBO work force would also be terminated. There has been much speculation about how the pay TV giant was doing in recent months and I followed each report with considerable interest.

Let's review what they have done or have been trying to do outside of our limited area of interest. **HBO is in the entertainment business.** Nothing else really matters; if they entertain enough people, well enough, repeatedly, those people will pay HBO money. The fees involved are relatively modest per entertained-subscriber per month (typically under \$10 for a household) and one would not suspect that at that level of cash outlay very many people would demand more than

HBO was able to deliver.

But HBO has been facing stiffer and stiffer competition; **Showtime** has been growing and **The Movie Channel** has been growing and this year there were a half dozen new 'regional' pay sports and payentertainment services launched. And sooner or later the consumer has to start making value-decisions.

Let's say the typical American household, in suburban or ghetto America, can figure out how to 'budget' \$30 a month for entertainment. That's a dollar a day. If they have cable available to the household, there's a ten dollar bill (give or take a few bucks) for the so-called 'basic service.' That's the cable euphemism for the local TV stations, a few satellite delivered non-premium services such as CNN, ESPN, WTBS, USA and CBN. And that \$10 is 1/3rd of the entertainment budget.

Now they have several premium choices. HBO is one; Showtime is another. So are Cinemax and The Movie Channel. And then there are services such as The Playboy Channel, Disney, and ARTS to name three that have special appeal to certain, select groups. Sometimes cable systems bundle or bunch or tier two or three of these premium services together; sometimes they offer them as standalones. In either case, there is a 10 dollar bill attached to virtually any 'tier decision' the customer may make, give or take a buck or two. So the cable subscriber has that first choice ('basic') and then two more chances in cable roulette to get to his \$30 budget.

The \$30 figure is not arbitrary; cable research shows that is about the maximum amount that the 'typical' subscribing home is willing to 'donate' to the local cable company in return for a multitude of programming choices.

The HBO decision was once an easy one; clearly the best of the premium services, it was almost always the **first choice** for the **second \$10** spent. Unfortunately for HBO, during 1984, that became a more and more difficult decision for cable subscribers. The choices multiplied, and HBO fell from an 'automatic choice' to a 'sometimes choice.' In short, HBO was no longer the quick and dominant choice of cable subscribers. Very few people saw that 'change' coming and certainly very few people at HBO saw it coming.

HBO has to plan well in advance for the movies and entertainment they select for airing; six months, twelve months, even 24 months. They watch the movie releases, and they plan their own specials well out in front of when these 'programs' will be available for use on the satellite network.

About 18 months ago HBO embarked on a very aggressive and very innovative program. They decided to get involved in the movie-making business. Until that point in time, HBO had been almost exclusively a buyer or renter of movies. They went into the movie marketplace and negotiated (often with a heavy hand) the price per-home per-movie. From those negotiations it became apparent to HBO management that as the number of HBO homes went up, they were starting to spend enough total, per movie, to justiify another approach; simply making the movies themselves.

#### Some numbers.

Let's say you had 10,000,000 homes signed up and you managed to buy a movie for 25 cents per home. That works out to \$2,500,000 'rental fees' for the movie. Or, suppose you could forecast your own growth and down the road you could see not 10,000,000, but 20,000,000 homes connected to your service. That same movie, still costing you 25 cents per home, would be costing you \$5,000,000 in rental fees.

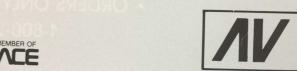
#### Some more numbers.

There was another possibility. HBO averages just over \$4.00 per subscriber home per month **from** their cable affiliates. At 10,000,000 cable homes, that gives HBO \$40,000,000 per month to work with. However, suppose HBO was going 'direct' to some segment of the homes. Let's say they reached the 10,000,000 homes at \$4.00 each but that they **also reached** another 1,000,000 homes at \$19.95 each. Now they had \$40,000,000 plus \$19,950,000 to work with each month. The 1,000,000 homes contributed almost 50% as much as the 10,000,000 homes. Yet those new 1,000,000 homes still cost the firm 20 cents for our example movie each. It was a very attractive set of numbers.

AVSAT DISTRIBUTING

**AVSAT DISTRIBUTING** 

**MISPACE** 



# AVSAT DISTRIBUTING STRIBUT

CARRIES A FULL LINE OF POPULAR BRANDS TO SATISFY OUR DEALERS/INSTALLERS EVERY NEED. SERVING THE EASTERN UNITED STATES, MID-ATLANTIC REGION.

**ACTUATORS** 

CABLE

**TRACKER** 

**PROSAT** 

RECEIVERS **AUTOMATION TECH. AVCOM** UNIDEN WINEGARD LNA'S **AVANTEK** 

CALIFORNIA AMP. MSF UNIDEN WINEGARD

**ANTENNAS** 

ADM DH SATELLITE HFR<sub>0</sub> **KAUL-TRONICS** STARDISH UNIDEN WINEGARD **ACCESSORIES ISOLATORS** 

CONNECTORS COAXIAL RELAYS DC POWERBLOCKS **FEEDHORNS** CHAPARRAL SEAVEY **AVCOM** UNIDEN

**FILTERS** LINE AMPLIFIERS **MODULATORS** POWER DIVIDERS **AVCOM** (2, 4, 8 WAY) POWER TRENCHER POST HOLE DIGGER STEREO.

**PROCESSORS** 

AVSAT DISTRIBUTING

AVSAT DISTRIBUTING

AVSAT DISTRIBUTING

**TOLL FREE ORDERLINE 1-800-24AVSAT** 

ALL OTHER PHONE COMMUNICATIONS 1-804-794-8800

**510 SOUTHLAKE BOULEVARD** RICHMOND, VIRGINIA 23236

MEMBER OF ISDA

**AVSAT DISTRIBUTING** 

**AVSAT DISTRIBUTING** 

**AVSAT DISTRIBUTING** 

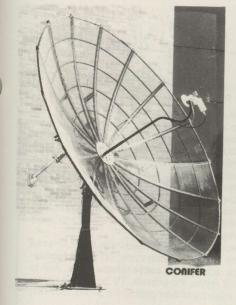
a good deal more for a good deal less



• ORDERS ONLY CALL TOLL FREE • 1-800-243-3019

MANUFACTURED BY WESTERN & EASTERN SATELLITE

WESTERN SATELLITE 916-337-6202 EASTERN SATELLITE 904-224-8965





The Master Stocking Distributor with the services you require, and the products you demand.



Full Service Distributor
Free Monthly Dealer Training Seminars
Free Weekly Technical Seminars
Competitive Pricing
Complete Technical Assistance
Prompt Shipment and Delivery
Factory Authorized Service
High Demand Product Line
Three Stocking Locations



- M/A Com
- Prodelin
- Omni Spectra
- Uniden
- Wilson

- Luxor
- Intersat
- Conifer
- Draco Aimers
- Winegard

Call for free Catalog & Price List

**Dealer Inquiries Only** 

## The Northeast's Leading Distributor

RR #1, Box 85-S, Catskill, NY 12414 (518) 678-9581 RFD #2, Harriman Hill Rd., Raymond, NH 03077 (603) 895-3182 317 E. Pleasant Valley Blvd., Altoona, PA 16602 (814) 942-5003

Dealer Inquiries Only (800) 528-DISH National

(800) 242-3860 PA only (800) 831-DISH New York only



### COOP'S SATELLITE DIGEST-

## 4VCO

Satellite receiver accessories

#### NEW PRODUCT FROM AVCOM

IPD-65 Isolated Power Divider 70dB isolation, typical!





**IPD-65** 

- Automatic Feedline Power Switching and DC Block Circuits
- LED LNA Power Indicator
- Extremely Reliable High Performance

#### **Ferrite Isolators**

3.7 - 4.2 GHz



For multi- receiver installations. Better than 60db isolation. Choice of connector configuration.

#### **Power Dividers**

3.7 - 4.2 GHz







PD-2

PD-4

PD-8

Available with Internal DC Block Order with "DC" suffix

#### DC Blocks





DCP-66 40 to 1500 MHz

DCP-1 3.7 - 4.7 GHz

Insert, Remove or Block DC Power

#### **ALSO AVAILABLE**

- · Cable · Coaxial Relays · Connectors · · Line Amplifiers · Coax Seal ·
- · Broad Band Amplifier · High Frequency Switch

**Contact Your Local AVCOM Distributor** AVCOM Information number: 1-804-794-2500

#### COOP/ continued from page 66

Now let's see where the number crunching gets us.

- 1) HBO embarked on a program to invest in movies. They decided that over a several year period they would be involved in funding \$1,000,000,000 in new movies. For those who read quickly, that's a billion; not a million.
- Funding a billion dollars in new movies is a pretty big bite, even for a company owned by Time, Inc. So they created an investor scheme which allowed individual investors with as little as \$5,000 to 'buy a piece' of a movie. And they raised essentially all of the money they needed for their ambitious \$1,000,000,000 project.
- 3) The movies they would make would have three major sources of revenue: (1) The theater release cycle, (2) the videocassette release cycle, and, (3) the cable release cycle. Add to this foreign sales of rights, the ultimate TV broadcast rights. and you have the essence of their getting the \$1,000,000,000 back. Someday.
- 4) However, making movies always has been and probably always will be a very risky business. Poor scripts, poor production and poor direction, improperly planned promotion all addup to the distinct possibility that any given film, no matter how big the star-names, can fail.
- Failure in the movie business has two levels; failure to makeback their production and promotion costs, and, failure to make back the anticipated net earnings. The latter worries the investors who hope to see their \$5,000 investment 'chunks' come back many fold; the former worries the actual producers who worry where the bucks originally invested will come from if the movies flop in the theater.

Enter the HBO twist. Since each movie was going to go through first a theater release, then a videocassette release, and then a cable release, HBO was in a position to at least 'guarantee' the revenues from the cable release cycle. The movie might flop in the theater; and that would usually assure that it would also flop in the videocassette release 'cycle.' But when it got to HBO-cable, if HBO was to 'guarantee' a certain revenue per (HBO) home, the movie would at least be assured of getting back a sizeable percentage of its original costs.

In selling the \$5,000 (minimum of course) 'investment chunks' it was pointed out that the people investing in the movies would be assured some type of 'safety' by the HBO cable release cycle. Perhaps a movie that cost \$12,000,000 to produce would be offset by 15,000,000 HBO cable homes each paying 20 cents per home for the 'rights' to view that movie. Let's see; 15,000,000 times 20 cents is \$3,000,000. That's 25% of the original film costs.

HBO was able to in effect 'quarantee' certain minimum revenues to each film which investors were buying a chunk of because they had their own subscriber base to 'work'. The films would be in production during 1984, 1985 and perhaps 1986; they would be in the theater release cycle the following year, and videocassette towards the end of that year. And the year after that, they would be on HBO cable. The first films would be in the theater in late 1984/1985, and onto cable in

Internally, within HBO, somebody was responsible for determining the 'size of the guarantee;' i.e. projecting how many cable homes HBO would be collecting just over \$4.00 per month from by say late 1985/ 1986. Let's pick a number and say it was projected that HBO would be into 16,000,000 homes by Christmas of 1985. Between the moment of projection and that period of time, there were 30 months or so.

So picture this. Someplace within HBO is a chart on the wall and it shows the actual number of 'home units' paying for HBO that month, the number paying for HBO for the past 12 months, and, as a projection, the number which had been forecast for each of those months (present and past) as well as the number of homes which HBO expected to be reaching for each month through December of 1985.

Now picture this. The actual homes being reached are following the projected homes to be reached pretty closely until the first part of 1984. Then there is a dip, followed by an obvious 'lagging.' After several months, the lagging becomes a trend; the projections are off!

Every business has internal projections. Many businesses use

COOP/ continues on page 74

The DSB-700 Home Receiver:

# ALL THE QUALITY FEATURES YOU'VE LOOKED FOR, IN THE PALM OF YOUR HAND.

Infrared remote control

Block downconversion • Capable of multiple-receiver hook-up
 Picture quality comparable to commercial receivers • Both 4 GHz and 12 GHz compatible

Video clamp/unclamp switch and composite baseband output • Frequency stability unmatched by other home receivers • Compatible with mechanical and electronic polarizers as well as DX's dual-polarity system • Affordable price

The new DSB-700, with infrared remote control, puts quality satellite reception at your fingertips. Control channel selection, volume, and fine tuning from anywhere in the room.

You'll also appreciate the sharp picture, quality features, important user conviences, cost, and attractive design.

From every standpoint—quality, performance, price—the DSB-700 is far ahead of other home receivers. The same features are avail-

able, without remote control, in our DSB-600. All developed and engineered by DX Antenna, world leader in satellite reception systems.

DX COMMUNICATIONS, INC.

A Subsidiary of C. Itoh & Co. (America) Inc.

10 Skyline Drive, Hawthorne, NY 10532 • (914) 347-4040

Manufactured by DX Antenna Co., Kobe, Japan







# **NUMBER ONE** SIX **YEARS**



and STILL number ONE!

CSD/COOP'S SATELLITE DIGEST. The ONLY industry publication that was 'there' when this industry began helping lay the foundation for what has today become a billion-dollar consumer business functioning worldwide! CSD/ two complete issues per month (CSD/2 issued on the 15th of each month) covering EVERY important aspect of TVRO from hands-on equipment reports to detailed learning courses designed to help you own and operate a more profitable TVRO business. CSD/ strong opinions in an often confusing mamby-pamby glut of meaningless press releases, claims and counterclaims, and, 'softshoe routine' editorials which say nothing and do nothing. CSD/ a virtual 'correspondence course' in TVRO communications designed issue after issue to make you smarter and better equipped to deal with a run-away technology base. CSD/ not a 'give away' publication paid for by advertiser support and 'advertiser favorable' editorials; supported BY dealers and distributors because it is the ONLY publication willing to stand behind and support dealers and distributors. CSD/ "Coop's" Satellite Digest from the man who started it all; and THAT says it all!

#### SIGN ME UP!

- ENTER MY U.S. subscription (where US zip codes apply) for 24 issues of CSD via AIRmail; \$75 (US funds) enclosed.
- CANADA/MEXICO Enter my 24 issue subscription to CSD, via AIRmail; \$85 (US funds)
  - ELSEWHERE Enter my 24 issue subscription to CSD, via AlRmail; \$100 (US funds) enclosed.

NAME .

Company (if applicable)

Address \_

Town/City \_\_\_

\_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_ Country \_

MAIL order with payment ENCLOSED, or, use VISA/ Mastercharge by calling 305-771-0505 weekdays between 9 AM and 4 PM eastern.

**CSD Magazine** P.O. Box 100858 Ft. Lauderdale, Fl. 33310 We still believe promises are golden.

# NATIONAL SATELLITE COMMUNICATIONS

While many reflect their good intentions, strong principles create our image. Basic truths form the foundation of our Nationwide Service Committment. Time and effort have made NSC a national distributor for all major brands of satellite receiving equipment. Quality support to our vast network while keeping the best interests of the consumer at heart, have meant something. Years of uncompromising professionalism helped shape our mutual goals. We constantly strive to be the best and encourage and train our dealer network to do the same

Call (Toll Free) today for the location of the nearest "Authorized NSC Dealer". Through NSC, his promises to you are golden.

For More Information:

In New York: 1-518-383-2211 In Florida: 1-305-851-4738 To Place Orders Call:

New York Office: 1-800-833-4485

In N.Y. Watt: 1-800-522-3538

Florida Office:

In Florida: 1-800-821-8659

Florida Office:

Regional: 1-800-322-4044



#### NATIONAL SATELLITE COMMUNICATIONS™

To Place Orders Call:

New York Office:

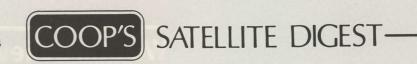
1-800-833-4485 (National)

1-800-522-3538 (In State)

Florida Office:

1-800-322-4044 (Regional)

1-800-832-8659 (In State)



#### COOP/ continued from page 70

their internal projections to plan equipment and raw parts and inventory needs. HBO was using their internal projections for a different reason; they were, in effect, counting on the accuracy of those projections to tell them just how much of a dollar guarantee they could expect to have available in late 1985/1986 and 1987 to offset their per-film costs for the films they had invested in.

More numbers.

Let's say that HBO expected 16,000,000 homes on-line when they saw the first of **their movie products** reaching HBO cable. That meant somebody had allocated perhaps 20 cents per home to the cost of that movie or \$3,200,000. And that \$3,200,000 was a form of 'guarantee' to the original movie investors that there would be at least 'that much money' returned to the movie makers (and movie investors) even if the movie was a total box office flop and nobody paid a dime to see it. Of course all movies make **something**, no matter how bad they turn out, so the actual gross revenues would be \$3,200,000 plus \$X where 'X' equals the unknown revenues from theater and videocassette.

But if HBO growth lagged, if the HBO 'universe' was not 16,000,000 in December of 1985 but closer to 14,000,000, there would be a 'shortfall.' Now rather than paying the movie producers 20 cents a home for 16,000,000 homes, the \$3,200,000 'guarantee' would cost HBO \$3,200,000 divided by 14,000,000 homes; or 23 cents per home. That may seem like a very insignificant 3 cents per home. It is not.

Tuck all of that away in the back of your mind for a few minutes. While one group within HBO has been wrestling with a decline in new subscriber growth, another group has been wrestling with the 'launch' of a totally new customer base; home TVRO systems. On the surface 'we' look like a pretty difficult market to tackle. HBO commissioned a study earlier this year to ask existing TVRO system owners if they would be willing to 'pay' for their premium services, which are now 'free.' There were three categories of responses:

1) 'Yes, we would, if ALL premium services were scrambled

(thereby eliminating a mixture of some scrambled and some not scrambled).' About 30% gave this answer.

Maybe we would (the wait and see if it is real group). About 30% gave that answer.

3) 'Hell No!.' This group said 'what falls on my house is mine' or 'We'll watch WGN' or 'There are a hundred channels up there and we don't like movies anyhow' or something equally illustrative

Those survey numbers gave HBO planners some reason for deep thought, and more planning. First they decided that if only HBO and Cinemax were scrambled, "there is not much of a business there." Some optimists within HBO suggested that perhaps the business universe might amount to 1 to 1.5% of the total TVRO universe; that translates to around 10,000 homes paying for the service when there are finally 1,000,000 home TVROs in the ground sometime in mid-

Which led them in a circle back to their original plan; somehow they had to talk Showtime and The Movie Channel into becoming a part of the package. Those negotiations have been ongoing for some months. They have never been close to finalization even though HBO had gone to the Justice Department to learn how Showtime/HBO could cooperatively sell to the home TVRO market and still remain at "arms length" to one another. Justice gets nervous when two firms in the same business try to get together, fearing that their real goal is to reduce competition in the marketplace. Suffice to say, HBO's legal staff has a plan worked out to accomplish this through a single marketing 'goal' even if there are two, seemingly separate, marketing 'efforts.' Still, Showtime was not budging.

To get Showtime plus The Movie Channel into the 'C Band Direct' (CBD) service business requires several steps:

A) First they have to agree to adopt a scrambling technique, THE scrambling technique being planned for HBO. That's the M/A-Com LinkAbit system. Why? Because if there is going to be a viable marketing program using the loosely federated 'Galaxy Broadcasting Companies,' there will be no chance for success if each of the individual Galaxy 'broadcasters' are

# DH SPUN PARABOLIC ANTENNAS NOW WITH A SUPER EFFICIENT 9'

## OVER 45,000 ANTENNAS INSTALLED TESTED 73% EFFICIENT

A spun aluminum antenna is the finest you can buy. DH is a national leader, producing 5000 antennas a month. We have more sizes and choices of F/D ratios.

DH Satellite North P.O. Box 462 Waseca, MN 56093 Ph: (507)-835-4454 DH Satellite West

P.O. Box 577 Buckeye, AZ 85326 Ph: (602)-386-7131



**DH SATELLITE** 

P.O. Box 239 Prairie du Chien, WI 53821 (608)-326-6705

Distributors and Manufacturers, contact us for quotes on quantity purchases.

Most sizes in inventory. Low delivery cost with pool trucks.

Available in focal lengths of 43", 36" or 31.5" in sizes from 9' to 4'.

Polar mount with ball bearing includes feed and plated jack.

DH Satellite East P.O. Box 832 Mt. Pleasant, PA 15666 Ph: (412)-547-6160 DH Satellite South P.O. Box 7521 Tifton, GA 31794 Ph: (912)-382-3867

each using their own scrambling system. At \$400 consumer cost per descrambler, the market-ability of the system is questionable at best. If the consumer has to lay out \$400 for two HBO channels, another \$400 for two Showtime channels. and another \$400 for say Disney and ESPN (et al), pretty soon the market is no longer a market at all. It simply disappears because it is priced out of reach of the typical buyer.

- B) Having adopted the same scrambling technique, there must next be agreement as to the time table for scrambling. If HBO scrambles in 1985, but Showtime won't scramble until 1987, is there any way for the 'CBD' program to be 'launched' prior to 1987? The answer is no because even those 30% of the people who said they would subscribe to a premium service conditioned their responses on 'IF all premium services were scrambled on satellite.' HBO is far down the road, of course, as we shall see shortly. Showtime has not even begun the scrambling trek. Some people suggest that until HBO has their system installed and operating in a 'proven/fail-safe' mode, Showtime won't look seriously at scrambling. In short, say these people, Showtime wants to see 'proof' of scrambling before they go as far as HBO has gone and sign a contract for a scrambling system.
- Next, with the system agreed to, and the system in place at Showtime (+ The Movie Channel) as well as at HBO (+ Cinemax) the next step is to implement a nationwide marketing plan. That says having a source (or sources) for descramblers, a technique to distribute those descramblers and to sell (as in market) the direct-to-home service. HBO has relatively mature plans for this, but they are HBO stand-alone plans; not plans that have been accepted by the other programmers on Galaxy. Naturally Disney, Turner, ESPN and others will want to have a

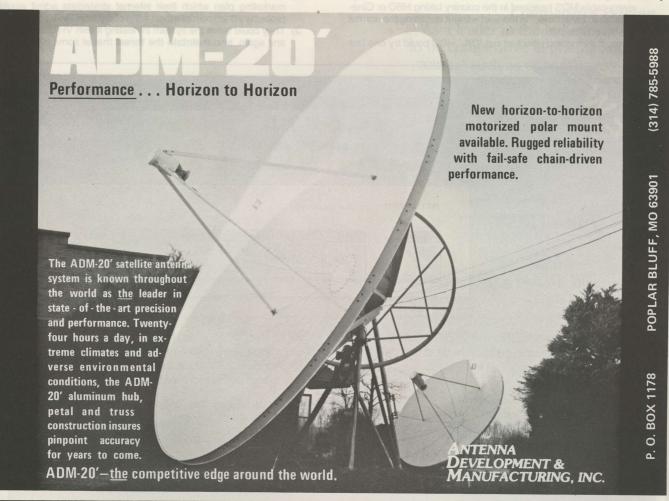
say in how all of this happens and there will be a not inconsequential period of time during which all of this is being sorted

Now let's jump backwards in time to the last week in October. Frank Biondi, the top man at HBO, is gone. Replacing him is a man named Joe Collins. And Collins comes to HBO from ATC, the Time (Inc.) cable television operating company. Collins has risen through ATC ranks and he comes to HBO with a single mind-set; cable television. He does not understand much about TVRO except that it is some sort of threat to cable television. Biondi had his own (M/A-Com brand) home TVRO system. Collins . . . well, he watches cable. Collins is brought on board because HBO projections are ahead of reality and HBO is facing some difficult dollar problems in the coming two to three years if the present slow cable growth trend continues as all of those 'expensive' movies come around to their 'HBO window' time frame. Surrounding Collins is word that 20% of HBO people will be let off, that entire departments may disappear, and that many new projects will be dropped.

CBD or home TVRO service is a new project. Perhaps CBD would be dropped?

Friday, November 2nd is 'CBD Day.' That's the day that Collins is to make a final decision concerning CBD. Should that special group organized one year ago to study the marketing opportunities of 4 GHz direct broadcasting be kept alive, or should it be killed? Nobody was certain late in October. Some were planning where they might go next if their jobs disappeared.

All week long, leading up to the 2nd, the experts in this field are 'crunching numbers,' working their calculators and computers overtime trying to build the best possible cases for continuing the CBD project. There is one carrot out there that is especially attractive; if somehow CBD can attract a substantial home subscriber base, say



#### PAGE 76/CSD/12-84



1,000,000 homes paying perhaps \$19.95 per month for a 'bundle' of 6 to 9 transponders, there could be a very healthy shot in the finances department for HBO.

Their arguments are as follows:

- The money spent, in that department, to date to research the TVRO market is already spent. Canning the project won't get a refund.
- 2) Home TVRO is growing (perhaps not as fast as some claimed, but it was growing far faster than cable nonetheless). And everyone in business likes to be a part of a growth cycle; it is far more profitable than a decline cycle!
- 3) The money committed to M/A-Com for the VC2C scrambler and descrambler system is all but totally spent. That remaining to be spent will go for the actual hardware for the system and getting 'out of' that contract could be messy. There was probably no good option to simply taking delivery on the M/A-Com equipment.
- 4) The equipment could be received and installed; the VC2C scrambler(s) at the Long Island uplink, the VC2C descramblers at the 10,000 cable/MDS 'headend spots' where they had been intended. At least in that way, the capacity to scramble would be in place.
- 5) The system could be demonstrated, perhaps convincing Showtime that this was a real technology and there was no reason for Showtime to wait any longer.
- 6) If the system was installed, it could be tested without interrupting the regular unscrambled transmissions. How? LinkAbit had created a method of scrambling only the Vertical Interval Test Signals (VITS) and a technique had been developed to do this to check out each of the VC2C descramblers in place while the regular video transmissions would pass through the cable headends unaffected. At least in that way, every cable/MDS headend in the country taking HBO or Cinemax could be 'proofed' in the field without upsetting the normal paying customers.
- 7) Then, if everything checked out 'OK,' HBO could try one last

time to convince Showtime and The Movie Channel to join the party. If they refused, and that refusal seemed cast in concrete, that would still leave HBO with the option for starting up the business in a small, quiet, way.

There were other possibilities of course. They are obvious.

- A) The whole program could be stopped and HBO could walk away from their own extensive scrambling research. Simply write it all off.
- B) The scrambling could be installed, checked out, turned on and HBO could walk away from the CBD marketplace. Simply say "We have decided NOT to offer our cable service to non-cable-customers" and that would be that.

By November 2nd Joe Collins has weighed all of the options and he had a decision. HBO **would proceed** with their plans; the VC2C scrambler would be installed at the Long Island uplink and VC2C scramblers would be accepted from M/A-Com for installation in cable (and DS) headends all over the country.

But, once installed, what would happen next?

- The system would be tested using the VITS scrambling technique.
- 2) Showtime would be 'further romanced' and a reasonable period of time would pass to allow Showtime to make up their mind about being a part of the 'Galaxy Companies' project.

By now we are at least up to mid-summer of 1985. That tells you that as a TVRO dealer, you won't know what happens next until perhaps that time. The equipment must get into the field, it must be tested, and Showtime must be given at least one more chance to say 'no.' At that point, HBO still has three options:

- They can throw the scrambler switch and instantly shut off private home viewers from HBO plus Cinemax service; and not offer it to private system viewers.
- 2) They can throw the switch and simultaneously trot out a marketing plan which their internal strategists admit would probably attract no more than 1.5% of the total TVRO universe.
- 3) They could leave the system in, testing it with VITS every now and again, and maintain the threat that at some future date

# ASTRO PROMISH CONTROL Z-200

THE
PRICE EDGE
VS
THE
PERFORMANCE
EDGE



You can get BOTH. The Z-200 offers superior performance and reliability at a competitive price.

Features of the Z-200 Include:

- Hi-Tech, Sleek Design
- Adjustable Electronic E/W Limits
- Key Parental Lockout
- Large 3-Digit LED Readout of Satellite Position
- Travel and Limit Indicators
- Optional Infrared Remote Control

- 36V Potentiometer-Based Actuator, Heavy-Duty Weather-Sealed with Slip Clutch
- 18" Standard Stroke Length, 24" available
- One Year Full Factory Warranty

Available November 1984.



Pro Brand International, Inc. 1629 Newberry Avenue Columbia, SC 29210 (803) 781-9694, 732-0027

Pro Brand International, Inc

## Success...

It takes more than just great products.



At Satellite Earth Stations, we supply our dealers with nothing but the best in satellite receiving equipment. Not to mention our own custom equipment and plenty of brand name accessories. But, a great product line is only the beginning.

It takes Quality Service.

As important as any fine product is the service behind it. For us, that means fast delivery, dependable professional maintenance and quick attention to your individual needs.

Competitive Pricing.

As a leader in the industry we have to be competitive in pricing and with volume such as ours, it's easy to do.

#### And a commitment to the future.

Success demands more than a great line of products. Since the industry's beginnings, Satellite Earth Stations has been committed to the future. Keeping on top of everything from the basics to the newest developments. Because we realize you are the key to our success.

Satellite Earth Stations

When you need us, we'll be here.

Satellite Earth Stations East, Inc. P.O. Box 160, Mamou, LA 70554 (800) 762-2110 U.S. Sales; (800) 252-3307 La. Sales; (318) 468-2201 Tech. Assistance;

(318) 468-2203 Local



#### PAGE 78/CSD/12-84



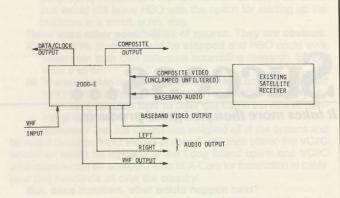
they would be ready to scramble by simply throwing a switch. Maybe, given time, the TVRO marketplace would mature sufficiently that Showtime would 'come around.' Maybe there would be other, now unforeseen developments and at least the scrambling system would be 'ready' if and when needed.

HBO does not like **not being** in the driver's seat. Showtime is certainly an impediment to HBO's desire to serve individual homes. But they recognize that if Showtime 'sits it out' and does not scramble, there is virtually no HBO TVRO business plan because very few people are apt to pay some number of dollars per month for HBO (plus perhaps Disney, ESPN, CNN, CMC et al) as long as Showtime sits there with The Movie Channel cranking out 24 hour per day 'free entertainment.'

HBO would like to see Showtime maneuver themselves into a position which makes it difficult for them to continue not being interested in the 'Galaxy Companies' plan. HBO would perhaps even 'help that maneuver' if they could figure out where to best strike at Showtime's weak underbelly.

Cable backlash is one possibility. The STC 12 GHz DBS plan is

HBO has decided to formally announce their CBD plan for direct to home 4 GHz broadcasting at the December 5-7 Anaheim Cable Show. That's the educated guess, anyhow. HBO will, as I have written for more than a year now, offer the 'marketing' of CBD to their cable affiliates first. How the cable affiliates will react, when it comes down to signing a contract to become a 'Wide Area Distributor' (NOT abbreviated WAD!) remains to be seen. HBO would like the cable affiliates to be central 'clearing houses,' acting as overseers for the wide-area-marketing and wide-area-solicitation of CBD service. HBO would also like the cable affiliates to farm out or sub-out the actual installation of VC2E or scrambling compatible TVRO receivers to area TVRO dealers. But HBO cannot force this issue; they cannot afford to 'anger' the cable affiliates. There is a possibility that Showtime may have done something, recently, which will anger the cable affiliates. There have been reports that the much-hyped STC 12 GHz service, now



OUTBOARD DESCRAMBLER 'sketch' distributed by M/A-Comearly in November shows basic routing.

perhaps scheduled for 1986 or so, will carry either or both Showtime and The Movie Channel. This is clearly a 'DBS' package and if there is something which acts like a red flag to cable operators these days, **it is DBS**. There have been rumblings that IF Showtme has decided to partner-it with STC on 12 GHz DBS, there might be a backlash for Showtime (and The Movie Channel) in cable camps. How that might

COOP/ continues on page 82



Satellite CONTRO/
Converter
Converter
Converter
Converter
Converter



18ga.

Motor Arm Voltage 14ga.

20ga.

Motor Arm Sensor 22ga.

#### TYPE 1

2 conductors #14 ga. 3 conductors #22 shielded w/drain wire 3 conductors #20 shielded w/drain wire

3 conductors #18 shielded

1 RG-59/U-20 ga.-60% braid-100% foil with type 3 black polyethylene jacket for direct burial

#### TYPE 2

2 conductors #14 ga. 3 conductors #22 shielded w/drain wire 3 conductors #18 shielded 2 RG-59/U—20 ga.—60% braid—100% foil with type 3 black polyethylene jacket for direct burial

#### TYPE 3

2 conductors #12 ga. 3 conductors #22 shielded w/drain 3 conductors #20 shielded w/drain wire 3 conductors #18 shielded 1 RG-6/U-18 ga.-60% braid-100% foil with type 3 black polyethylene jacket for direct burial

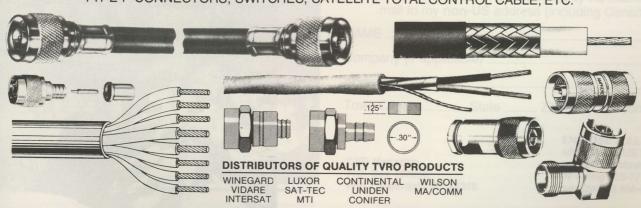
#### TYPE 4

2 conductors #12 ga. 3 conductors #22 shielded w/drain wire 3 conductors #20 shielded w/drain wire 3 conductors #18 shielded 2 RG-6/U—18 ga.—60% braid—100% foil with type 3 black polyethylene jacket for direct burial

#### **AND C-Z CONNECTOR & CABLE COMPANY**

55 Railroad Avenue ● Garnerville, NY 10923 ● (914) 947-1554 ● (800) 423-2322

DEALERS AND DISTRIBUTORS • CALL TOLL FREE FOR COMPLETE CATALOG AND PRICING MANUFACTURERS OF COAXIAL CABLE, MULTICONDUCTOR CABLE, TYPE N CONNECTORS, TYPE F CONNECTORS, SWITCHES, SATELLITE TOTAL CONTROL CABLE, ETC.



# THE NEAR-PERFECT CHRISTMAS GIFT FOR SOMEONE IN OUR INDUSTRY

The CSD Two-Hour 'TVRO Birthday Special Videotape Presentation.









#### MORE THAN

# 5

## YEARS IN THE MAKING—

TVRO's **5TH BIRTHDAY PARTY** as televised October 18th on Westar V and Galaxy 1!

TVRO's most spectacular two hours/ 120 minutes of 'The Roots of TVRO' including rare film of October 18, 1979 FCC approval of deregulated home TVROs, rare 1978 and 1979 network newscasts dealing with early TVRO systems, and a close, intimate look at Industry Pioneers Robert Coleman, Robert Taggart, Richard L. Brown, H. Taylor Howard, David Barker, David Brough, John Ramsey and from Sri Lanka in the Indian Ocean, Arthur C. Clarke!

**LIMITED EDITION** two-hour format VHS tapes available **only as long** as the supply lasts, only via **AIR**MAIL, just in time for consideration for 'holiday season giving,' to and for people in our exciting industry. This 'TVRO Spectacular' produced by West Indies Video and Don Hunt Teleproductions to commemorate the TVRO industry's fifth birthday during the Nashville SPACE/STTI show 'Birthday Party'; see the 'party' intact **plus** 50 additional minutes skillfully woven into a professional **TV** two hour **'special'** just for you! Use order form below or call 305/771-0505 weekdays between 9 AM and 4 PM eastern with your Visa/Mastercharge card handy!

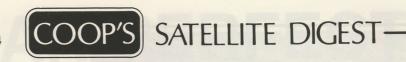
#### MAKE ME A BIRTHDAY PARTICIPANT!

- \$55 (US funds) enclosed; send me VHS format two-hour speed 'TVRO's 5th Birthday Party via AIRmail to my U.S. address.
- \$65 (US funds) enclosed; send me VHS format two-hour speed 'TVRO's 5th Birthday Party via international AIRmail to my non-US address (including Canada, Mexico).

NAME \_\_\_\_\_\_\_
Company (if applicable) \_\_\_\_\_\_
Address \_\_\_\_\_
Town/City \_\_\_\_\_ State \_\_\_ Zip \_\_\_ Country \_\_\_\_\_

CSD Magazine P.O. Box 100858 Fort Lauderdale, Fl. 33310 ENCLOSE FULL payment with order in US funds or use Visa/Mastercharge by calling 305-771-0505 weekdays 9 AM-4 PM eastern.

#### PAGE 82/CSD/12-84



#### COOP/ continued from page 78

benefit HBO's C band DBS plans is unclear.

1) If cable operators threaten Showtime by removing their cable service carriage, Showtime will be hurt. Would that induce them to pull back out of an STC agreement?

If Showtime is thus hurt, how does that convince Showtime that they should go ahead and scramble their C band service and thus join HBO in the C band CBD plan?

There are those who suggest:

3) Showtime would have to scramble their 4 GHz service just to make their 12 GHz service viable. Why pay for it at 12 GHz if it is free at 4 GHz?, goes the argument.

4) And, once scrambled or scheduled for scrambling, might that not get HBO in a position where HBO could then 'throw the switch' and offer a CBD service perhaps without Showtime participating?

Afterall, HBO is less interested in sharing the income for a CBD service with another premium service heavyweight than they are in seeing that there are no unscrambled premium service signals available at 4 GHz. Remember their own internal projections; they might gather up 30% of the home TVRO market if all premium services are scrambled on 4 GHz; they might sell 1.5% if some are still unscrambled. That's a big difference in dollars.

Well, the more we know, the more we speculate about. And the more uncertain we are about anything!

Into all of this crazy world pops M/A-Com. As reported in some detail in CSD/2 for November 15th, M/A-Com managed to 'put their foot into it' back late in October. M/A-Com helped fund a direct mailing to virtually every known TVRO dealer in the country and that mail piece was intended to place fear into the hearts of TVRO dealers. I won't revisit the thorough CSD/2 report here except to summarize it:

A) The mail out piece was sent out in 'clandestine' fashion; the source, or the firm paying for the mailing, was not identified by the mailing itself.

The piece reprinted material originally published in the June B) (01) 1984 issue of CSD in which I set out all of the evidence I saw which was suggesting to me, late in May, that 'unchecked,' M/A-Com was going to be in "the driver's seat" with home TVRO receivers because they had the contract for the scrambling (LinkAbit) system as well as the contract for the VC2C or cable style descramblers from HBO.

C) The mailing attracted plenty of adverse reaction, especially from receiver OEMs and distributors who felt it represented poor business ethics

As CSD/2 did report for November 15th, M/A-Com was responsible for the mailing and it was largely designed to help M/A-Com 'clear warehouses' of their T1 and H1 series receivers. It has been, afterall, a 'slow selling season' for TVROs; there has simply been too much product available and not sufficient 'qualified dealers' to move it out to the consumers.

So right in the middle of the very real and very serious internal problems at HBO came a TVRO industry bombshell designed to scare the crap out of dealers; in effect telling dealers that if they were not now handling M/A-Com brand receivers, WHEN the scrambling finally does come, those dealers might find themselves without ANY scrambling-compatible receiver products to sell. Receiver OEM reaction, was to say the least, 'dramatic.' HBO felt the first wave of resentment because many of the receiver OEMs have been cooperating, behind the scenes, with representatives of both HBO and M/A-Com to get some intelligent planning going so that ALL TVRO receivers that wanted to be scrambling-compatible could be scramblingcompatible by the time scrambling actually comes.

Nobody knew, at the time, except perhaps M/A-Com who has (even today) an inside track on such things, that scrambling is now just as far away as it has ever been; even with the news that the first VC2C scrambler system was shipped to and scheduled for installation at the HBO uplink site on Long Island in November.

If M/A-Com actually knew that HBO was going to be forced to 'slide' their scrambling debut well into the 1985 year, could not M/A-Com be accused of instigating the infamous mailing piece merely to help it clear out warehoused TVRO receivers which they claim are

#### 3. Interface Specification

#### 3.1 Specification of Receiver Outputs

#### 3.1.1 Composite Video Output from TVRO Receiver

Unclamped, unfiltered, deemphasized NTSC, video output. Signal Type

CCIR REC. 405-1. Non-deemphasized output is also Deemphasis acceptable but not recommended

Video Polarity Negative sync.

100 mV p-p to 1.1 V p-p. 1 V p-p ± 10% is recommended. Signal Level:

75 ohms, AC coupled (with minimum of 1500  $\mu$  coupling capacitor) or DC coupled (with maximum offset of  $\pm~2~\text{V})$ Output Impedance

20 dB minimum

+0.5 dB; 30 Hz to 3.58 MHz. Frequency Response: +1.0 dB; 3.58 MHz to 4.2 MHz

Chrominance-Luminance

Delay Inequality:

Differential Gain: 5% p-p max. (10-90 APL).

5° p-p max. (10-90 APL). Differential Phase:

5 IRE p-p max Line Time Distortion: Field Time Distortion: 5 IRE p-p max

47dB minimum with deemphasis

(Weighted)

#### 3.1.2 Monaural Audio Output from TVRO Receiver

(Optional, For "Not Scrambled" Bypass)

Baseband audio.

1 V p-p maximum Signal Level: 1 K ohms max Output Impedance:

3.1.3 2000-E Connectors

Composite Video from Receiver RCA Phone Jack

RCA Phono Jack Baseband Audio from Receiver

#### 3.1.4 Other 2000-E Connectors (For Information Only)

RCA Phono Jack Composite Output:

RCA Photo Hack Baseband Video Output:

RCA Phono Jack Audio Output:

VHF Output:

VHF Input: Type F

RCA Phono Jack Data Output: RCA Phono Jack Clock Output

THESE ARE M/A-COM specifications distributed to industry receiver OEMs early in November. Bunker called them "92% accurate to CSD printed specifications this past summer."

Type F

'scrambling compatible'? Some thought so.

M/A-Com T1 and H1 receivers are best described as 'top-end priced.' That means that they get more for them, from the dealers, than most other receivers. One of the key features they have been pushing to distributors and dealers is the supposed M/A-Com 'inside track' on the descrambling requirements; even so far as to have field sales people promising the dealers that if they buy M/A-Com T1 and H1 receivers, the dealers will be 'the first' to have descramblers available for their customers. Those kinds of promises have found their way back to the boardrooms at Winegard and Channel Master (et al) and the M/A-Com competitors have been unhappy with this selling tactic. Still, they had the confidence that because HBO had people on the road talking with them about making their own TVRO receivers

## The Avantek LNA Dynasty



Avantek has earned its long reign of leadership in LNAs, a dynasty established to meet the early desire for improved satellite reception. We pioneered the technology and we remain the leader because of constant improvement and service you can count on. Long after others fail, Avantek will consistently be judged the industry standard for performance and reliability.

The dealer that uses Avantek LNAs in his systems is building in confidence. Our experience in creating the industry standard means a more satisfied customer to you. And it's documented that every Avantek LNA meets or exceeds specifications to ensure consistently better and more reliable TV reception.

We're also the same people that make sophisticated microwave components for crucial military and space applications, and complete telecommunications systems for business and industry. Call your authorized Avantek distributor today. Tell him you want only Avantek LNAs—the ones you can count on for a long, long time.

#### **Avantek LNA Distributors:**

#### Alabama

Longs Electronics (800) 633-6461 (800) 633-3410

#### California

Echosphere Corp. (916) 381-5084 (800) 338-5477 (800) 338-5478 (CA)



#### Colorado

Echosphere Corp. (303) 935-1909 (800) 521-9282

#### Florida

Southeast Sat. Dist. (904) 824-1915 829-5434 (800) 824-3474 National Sat. Comm. (305) 851-4738 (800) 821-8659

#### Georgia

Kelgo Intl. (800) 241-8189 (800) 282-6070 (GA)

#### Indiana

Hoosier Electronics (812) 238-1456 (800) 457-3330

#### Kentucky

Starpath Sys. (606) 276-4435 (502) 343-3898

#### New York

National Sat. Comm. (518) 383-2211 (800) 833-4485

#### Pennsylvania

Kelgo North (412) 787-2770

#### South Carolina

Quarles Sat. Sys. (803) 229-7990 (800) 845-6952 (800) 922-9704 (SC)

#### Tennessee

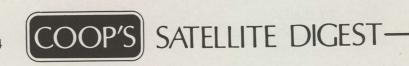
Echosphere East (615) 966-4114 (800) 223-1507

## **Avantek**

Milpitas, California

Copyright 1984 Avantek, Inc.
Avantek is a registered trademark of Avantek, Inc.

#### PAGE 84/CSD/12-84



'scrambling compatible' by early in 1985, that the advantage of M/A-Com's was at best temporary.

The mailing piece changed several minds on this. It looked to some that HBO had been 'double dealing,' that there was some sort of (ugly word) conspiracy here between HBO and M/A-Com. A conspiracy has a certain legal implications.

HBO reacted instantly to assure the receiver manufacturers that they had no knowledge of the M/A-Com mailer, and that further there was no truth to the message the mailer contained. HBO was 'wounded' in the integrity department by the mailer since it was cleverly designed to make it appear that what the contents said (written in May and published in June) was the 'present state of scrambling.' The mailer neglected to mention that HBO and even M/A-Com had been working, since at least September, to help receiver manufacturers who wanted help with the descrambler interfacing. This 'oversight' was labeled 'dirty, unethical marketing' by receiver OEMs who were forced to sit on the telephone with their own distributors and dealers straightening out the false image the mailing created.

Now let's try to tie all of this together.

 HBO has changed management at the top. Some almost-top positions are also fluid and it all gets back to HBO's failure to grow, during 1984, at the subscriber rate projected. HBO has been planning on certain growth to fund elaborate 1985 and after movie acquisitions.

2) HBO cannot seem to get Showtime/The Movie Channel to agree to a scrambling system, nor to agree to a CBD Galaxy One marketing program. Their own internal planning tells them that absent universal scrambling, the marketing potential for

a CBD service is just slightly larger than 'zero.

3) HBO has accepted delivery of their first VC2(C) type scrambler but there is still, today, no production line flowing to turn out the 10,000 VC2C descramblers (see CSD/2 for November 15th). This means that HBO needs no less than seven to eight months from today to be operational with a full cable-level scrambler-equipped market.

4) In the middle of this has come a clandestine mailer from M/A-Com which attempted to tip the scales towards T1 and H1 receiver products, using 'the fear of instant scrambling' as a 'sales tool.'

Here is my summary of the summary. I don't believe any of us will remember that M/A-Com was implicated in this clandestine marketing trick in 12 months. I do believe that HBO will remember it happened and I would not be surprised to see the relationship between HBO and M/A-Com 'suffer' as a result of the clandestine mailing. I also don't expect HBO to be able to sort out the Showtime reluctance to participate for at least six months; anything any sooner than that will come as a complete surprise to me. Finally, I believe that we are now looking at perhaps September 1, 1985 before HBO is able to field any kind of effective CBD program and it may well be far later than that. Which means? That we have just bought ourselves perhaps another 'free year' of service to allow our system sales to grow and our own 'seeding of the CBD universe' to sprout and mature. And welcome to 1985!

#### **NORTH To Sweden**

In 1983 some worldwide group awarded the SAS Airline, head-quartered in Sweden, recognition as being 'The Best Airline' (in the world). I discovered this while boarding SAS Flight 912 from New York's JFK Airport heading on the first leg of our trip to visit the Luxor headquarters in central Sweden. Unquestionably, Air India would not be in the same class as SAS. The food was abundant and very edible, the 'towels' hot, and the staff attentive. None of this would describe Air India.

Crossing the Atlantic is a nighttime experience. Virtually every airline serving European destination departs American east-coast cities around dusk and with the combination of jet speed and the time difference, you will invariably end up in Europe between 8 and 10 AM local time. This can be 5 to 7 hours 'earlier' than the east coast which simply means you arrive just as you have run out of 'steam.' 8 AM in Copenhagen, for example, is 2 AM in New York City. At best you catch



PAGE 85/CSD/12-84

a few winks during the flight and arrive totally bushed. The wise traveler schedules nothing for the first day in Europe save adjusting to the time difference.

Susan and I arrived in Copenhagen on our way into Sweden. Copehagen is in Denmark and it apparently serves about the same function as Dallas or Atlanta or Denver; major airlines converge here so you can change planes to go on to your final destination.

"The weather in Copenhagen is 'normal' for this time of year" announced the pilot. That didn't tell us much until we had deplaned; 'normal' turned out to mean 45 degrees F, heavily overcast and a light rain. With any luck at all it would be snowing at our Swedish destination. Now let's see; where did I stick my emergency pair of socks? Somehow my Provo sandals did not seem like appropriate attire for my feet!

Frostbite of your toes aside, there are several dangers associated with traveling rapidly from the Caribbean to Sweden in mid-fall. One is your stomach's reaction to major diet changes. I had been purposefully avoiding red meat, dairy products and wheat by-products for a couple of weeks when the trip began. When last on Provo, I had lived off our new 'orchard' and garden; fresh oranges, watermelon, bananas and other pick-to-eat foods was my diet. Susan had been visiting with the McClaskeys in St. Louis and she flew into Newark to catch up with me for the Swedish trip. We were the guests of Peter and Marina Sutro for 24 hours before departing for Europe. They had returned only days previously from a month in Italy (satellite business takes us 'all' to some distant points). Some months ago I had written of dining at the Maniaci's home in Downey, California and had noted that Mary Maniaci was one of the best 'international cooks' I had ever ingested. Peter felt Marina was 'the best Italian cook' in our industry, perhaps the world and he was anxious to prove that to me. Well, so much for my watermelon, orange and banana diet!

Six pounds and 24 hours later I stumbled out of the Sutro home with Susan and lumbered to JFK. In all fairness to Mary Maniaci, I have never eaten Italian food at her home so cannot compare her cooking to Marina's. In all fairness to Marina, I have never had better

Italian food in my life; including Italy. I guess we will have to schedule an 'Italian Cook-Off' at some suitable TVRO industry event; perhaps at the 'Sixth Birthday Party' in Nashville.

The Sutros obviously had a master-plan which didn't quite work. I am sure they meant to dull my senses with heaping selections of Italian food so they could beat Susan and I at cribbage. I am pleased to report that the Sutros are not the Cribbage Champs of TVRO; this year. Pasta and wine may have taken their toll, but Susan and I still whipped them in a four game set.

Getting from the Sutros to JFK should have been a 'lark.' We allowed almost 3 hours between leaving Peter's home and our departure time. With check-in one hour in front of flying, that left about two hours to drive 50 miles. With no minutes to spare we ran to the airplane just as the doors were closing. New York area traffic is surely the worst in the world when it really wants to be. Our Italian 'feast' still solidly lodged in our stomachs, the Swedish feast began. And it went on for nearly seven hours, stopping only for hot towels, cold drinks, and the mandatory movie. Anyone who wanted to sleep had to fight the environment to do so and now ten pounds 'overweight' I walked with heavy feet into the Copenhagen airport. I did a quick calculation and determined that if I ate under 250 calories per day for the seven days remaining in the trip I would probably arrive back in New York on November 3rd only three pounds heavier than I left Provo. It didn't look very promising.

We changed planes in Copenhagen after a two hour wait and went north on a 'feeder' airline. Two stops later, we were on the ground in Jonkoping and **Stig Karlsson** was meeting us. Jonkoping is still some distance from Motala (125 km and that is where Luxor is located). Stig's Volvo would get us there. "This is not the best time of year, I think" Stig volunteered. "But I will try to show you something." I expected a two hour drive. **Stig expected lunch.** Susan and I had avoided the breakfast on the flight to Jonkoping. It would be harder to avoid lunch with Stig.

Luxor presently employs around 1,500 people in the Motala plant. The fortunes of Luxor have not always been as good as they are

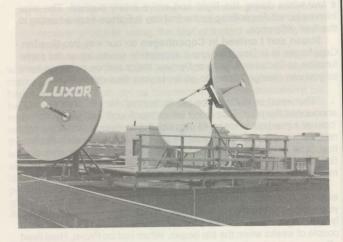




LINDY YNGVESSON/ Managing Director moved into the top spot from the 'R and D' area.

today. The company was started in 1923. The founder was a John Ramsey/Andy Hatfield kind of guy as best I could piece it together. It was privately owned in those days. Today, Luxor is owned 30% by the Swedish government and 70% by a Finnish (as in Finland based) firm. The recent past had been quite uncertain.

Luxor had jumped into first black and white and then color television set production in the 50's. Their market was 'Scandinavia,' or, Sweden, Finland, Norway and perhaps Denmark. They had done well and by 1979 had grown to more than 3,000 employees. **They had also gone 'bust.'** One day they simply ran out of money. The Swedish government stepped in to save the jobs and bailed the firm out. Major suppliers received, ultimately, approximately 70 cents on the dollar. The work force was trimmed to near the present levels and a number



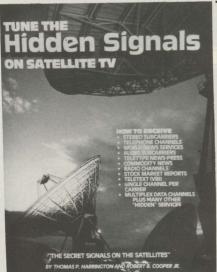
ROOFLINE in Motala; Luxor's dish farm (a segment) is working at both 4 and 12 GHz.

of new product and management approaches begun. And it worked. Luxor had never really lost its Scandinavian 'market share,' even during the 'dark days of '79' but it had lost a considerable amount of prestige. Other Scandinavian producers of consumer electronics were also falling and Luxor was perhaps unique because it survived the cash crunch and emerged as a lean and mean machine.

Their 1,000,000 square foot facility echoes. A work force of 1,500 is hardly small but in this size facility it fairly 'rattles around.' It may, as I was told, "cost a great deal to heat this in the winter," but the upside of their space is that they have the luxury of planning product flow and research requirements without trying to cram things together.

Sweden once boasted the 'highest standard of living' in the world. I am not sure who measures such things or how they measure

# THE HIDDEN SIGNALS ON SATELLITE TV "THE SECRET SIGNALS ON THE BIRDS"



#### A Technical Book Covering the Reception of:

- **■** Stereo Subcarriers
- **■** Telephone Channels
- **■** World News Services
- Audio Subcarriers
- Teleprinter News Press
- **■** Commodity News Services
- Radio Channels Networks
- **Stock Market Reports**
- Teletext (VBI)
- All Single Channel Per Carrier Services (SCPC)
- Multiplex Data Channels Plus Many Other "Hidden Services"

#### **NEW "SECRET SIGNALS" BOOK**

A complete work covering the Hidden Services, the systems, the equipment, how these services are used, how these services can be utilized, what they mean to our field. This book for information use only. Not to be used for the reception of unauthorized signals or pay services.

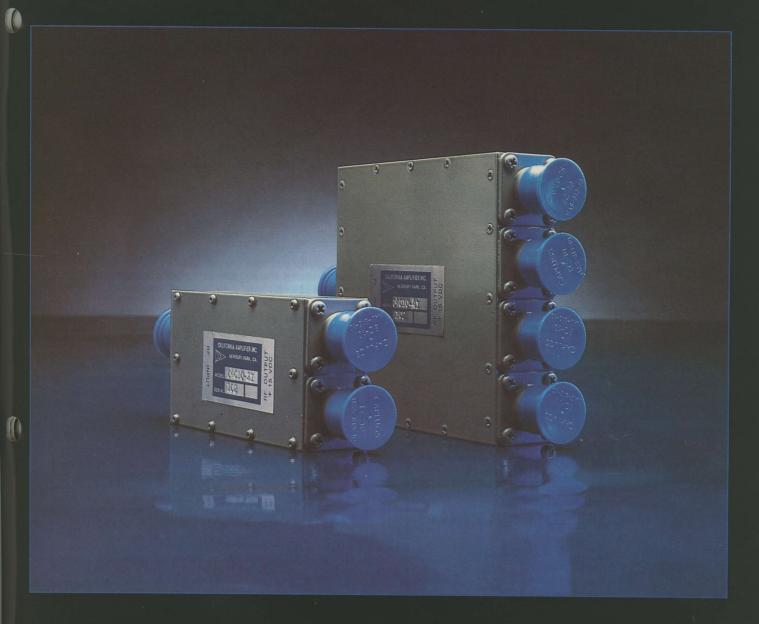
Visa and MasterCard Welcome \$14.95 plus \$1.75 for shipping & handling.

**CSD READER SERVICE,** P.O. Box 100858 Fort Lauderdale, FL. 33310; 305/771-0505

Dealer Inquiries Invited

Dealer Member

# SIMPLE DIVISION.



California Amplifier's new Isolated Two and Four-Way Dividers make any multiple receiver system simple.

These new dividers split the signal, isolate the receivers, and block DC between all ports while passing DC power to the LNA.

California Amplifiers new

Isolated Two and Four-Way
Dividers deliver a full 55 dB
Isolation between each receiver.

Fully waterproof, these rugged new dividers are the most economical and practical Two and Four-Way power dividers available. Ask for California Amplifier and make a Simple Division.

# California Amplifier

California Amplifier Inc.

3481 Old Conejo Rd., Newbury Park, CA 91320.

(805) 499-8535, TLX 469193

#### PAGE 88/CSD/12-84



it, but I was told Switzerland is now 'first.' Common sense tells me that there is probably an ugly relationship between 'standard of living' and 'cost of living.' I can report no 'bargains' in Sweden. One usually expects or hopes for some special shopping enticements when visiting a foreign land. The Swedes have crystal, lace, wood carvings of local manufacture. They also sell a number of Reindeer (horn) creations. Susan remarked they are very 'artsy-craftsy.'

"We have the highest taxes in the world" reported Karlsson. "But we also have the best social services in the world." Example: you are paid to have children. The more children you have, the more you are paid per child. That led to the inevitable questions, by me, of Swedish 'sex life.' I had heard that the Swedes ranked high in 'sexual freedoms.' My hosts laughed loudly. It was not a gloating kind of laugh.

'We have that reputation' began the answer. "And one day, perhaps many years ago, that was true. But the rest of the world has caught up and passed us now. We are really quite old-fashioned." There had been a 'sexual revolution' here; once. Then it passed and all that remained was a memory. I would rank Sweden, today, down someplace with Japan in that department. I saw polite, even prudish behavior between the sexes while in Motala. I cannot ecommend Sweden for those searching for uncontrolled and quick romps in the

Government is in everything; from the takeover and ownership in Luxor to the exceedingly heavy taxation. Where the federal government leaves off the local governments begin. Every worker has a good quality place to live and plenty to eat; what he or she cannot afford

government makes up.

"It is not possible for a person to work hard and become wealthy in Sweden" noted two of my hosts; "taxes are impossible." I noted that Americans complain about taxes as well. I was given an example of the basic tax law adopted by the government not very long ago. As the income increased, taxes increased. At one level the taxes became 110% of the increase; in other words the worker reached a point where as he earned another dollar, he paid \$1.10 in taxes. I had



NOT Ku BAND/ you lose the bet. This 3 footer is operating on Russian Gorizont channel just below our channel 1 (so-called 1 minus) from 14 west signal feeding Motala hotel (S)MATV system. The only satellite channel available!

to agree there was not much 'incentive' to try to 'do better' given that circumstance. But the Swedes were not complaining to me, merely pointing out that while the 'standard' of living was indeed very high, there was a 'price' being paid. The economy does not 'float' as readily as does the U.S. economy; example. Gasoline prices have recently come down. About 15% to be precise. That was the good news. The bad news was that because the basic price had dropped, the government was about to increase the gasoline taxes; 30% to be precise. With the tax already amounting to nearly 50% of the per-liter price, the net effect of the marketprice drop was about to be '0'; Swedish motorists would be paying almost exactly what they were previously paying (around \$4.61 Swedish Crowns per liter) prior to the price drop.

A fundamental grasp of the Swedish economy as well as the history of Luxor was instructive; it helped me understand why, and how, a European company located in a market region with no real satellite industry or market might be in the TVRO business. Sweden, unlike Japan, is hardly a world exporter of electronics. In fact virtually everything which Luxor manufactures ends up being sold in the four-

country 'Scandinavian Market.

"There are perhaps 1,500 'private' satellite terminals in Scandinavia" a Luxor source told me. It surprised me the number was that high. The only use for a 4 GHz TVRO terminal in Scandinavia is to receive the Russian spot-beam service. With the 47 dBw 'footprint,' even a 1 meter dish is system design overkill. My hotel in Motala had a small Luxor terminal, starting with a dish 'nailed' to the front entrance of the building. The Russian channel was taken from SECAM to PAL format in the Luxor receiving system and placed on a 'cable channel' for re-distribution within the hotel. This is the Moskva or European service, operating at what we Americans call channel '1-'. That means it is operating just outside of (below) the 3.7 to 4.2 GHz band. I spent some time watching the service and decided that from the American viewpoint it was about the least inspiring programming I had seen anyplace in the world. I mentioned the uninteresting program content

"Yes, but it is broadcasting some 18 hours per day and there are SOME good programs" I was told. The 18-hours-per-day was the key point here; local television (two Swedish 'national' channels) signs on at around 4 PM and goes off around 11 PM. I had watched some of that as well. It also would not rate high for its 'entertainment value'; education, yes. Information, yes. Entertainment? No!

There is a tremendous demand for different television here in Sweden" another noted. "We could sell many, many of the 'Russian Terminals' if only the language was not so impossible!". So why was Luxor building and selling 4 GHz receiving equipment? There was no real market in Scandinavia; there was no real market in Europe. And Luxor as a company was not into exporting and they certainly were not into exporting to North America. Curious.

I had suspected that somehow Luxor had been talked into the 4

#### NEW VIDEO TRAINING TAPE

a 30 min. tape that clearly presents the basic installation principles common to ALL antennas

#### ING SATELLITE ANTENNAS



★ Site Check

- ★ Dish & Mount Assembly
- \* Aiming & Tracking
- ★ Troubleshooting

EXCELLENT for: Training New Dealers/Installers
'Install-It-Myself Customers'

VHS and BETA II Also: SATELLITE TV BASICS© (a 13 min. sales-aid)

SHELBURNE FILMS

54545 SR 681 Reedsville, Ohio 45772 (614) 378-6297

#### THE DISH TESTER

Dish surface accuracy is probably *The* most important part of a good picture. Ever wish you could check it? Now you can, with a tool small enough to fit your tool box — The Dish Tester. It will answer questions like: Do I have to replace that dish, or can I pull it true? Are my sparklies caused by the electronics or a bad dish factories get tired of returned electronics that work good. Was the metal dish bent in shipping — the Dish Tester will tell you. Did you assemble the dish correctly? Has the base warped the dish? Why sparklies in every other dish, they're all the same? Is it TI causing sparklies, or a bad dish? Where do I put the clips or extra braces to make that mesh dish more efficient? It didn't have sparklies before the windstorm, but it does now — is the dish bent — the Dish Tester will tell you. Am I taking the right dish to the show? Are my mfg tolerances O.K.? Send \$20.00 (any way you want), and we will

send you a Dish Tester postage and tax paid. Send to: STV Co., Dept. A 516 W. 33rd Hays, Ks. 67601



IT'S TEN O'CLOCK IN MOSCOW/ 'Do you know where your kids are?'. Probably not watching this enlightening play-by-play description of a chess match, featured on the Russian Moskva service beamed into Europe on TR1-minus (and into our hotel in Motala).

GHz business by STS's Jim Rothbarth. He, afterall, had been the man (and the firm) which had introduced Luxor to the American market, in the fall of 1982

The truth was a surprise.

"When we had the financial crisis of 1979, we already had a 4 GHz receiver designed" it began. "It had been an engineering product of the engineering department. We also had a 12 GHz receiver designed. It was our belief, at the time, that the 12 GHz market would be quite active in Europe by 1980 or so. We were ready for it and would have perhaps been the first European company to have 'consumer 12 GHz equipment' in the marketplace.

"As we came out of 'the crisis' (with the Swedish government taking over the company and paying off the creditors) we saw that the 12 GHz market was not happening. But the American market was moving very rapidly, at 4 GHz. At that point our basic receiver was designed and it did not care whether it had a 12 or a 4 GHz 'input.' Through a Los Angeles firm, we solicited interested American companies to 'bid on' becoming sales agents for a proposed 4 GHz package. Only because we lacked the development of a 4 GHz 'microwave head' and the time it would take to create one, we had to find a way to locate the required downconverter technology elsewhere

Rothbarth, or STS, had been one of 'approximately 40 firms' which had responded to the call for 'bids.' He was one of the few responding who had any C band marketing experience. At that point in time (early in 1982) STS had been 'brokering' receivers for firms such as National Microtech.

The initial numbers, through the first part of 1983, had been 'small' by 1984/85 standards. The first receiver 'run,' spread over manymany months, had been but 6,000 receivers. But to Luxor it was a new and very important source for revenues. And to hear Luxor people tell it, in Sweden, they were very impressed with Rothbarth at that time. "It was an exciting period" remembers one; "Jim had a new 'idea' every day and we had to learn how to respond fast to his suggestions and requests. We were forced to learn alot about American marketing and we most of all had to learn to move faster; far faster than we were accustomed to 'moving' in Scandinavia!"

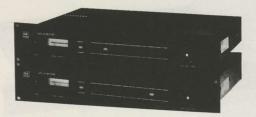
The first pressures had been on increasing product production. "Every day it was 'send more receivers!' on the teletype" another recalls. "From our vantage point the market seemed to be bottomless." That was before the first 'problems'; problems that revolved around the early downconverters which STS had selected in the USA. As many dealers were learning, the downconverters did have a stability problem. Users liked the many operating controls. The pictures were acceptable if not brilliant. But there was a 'thermal drift' problem with the downconverters.



#### The DSA-643A bu DX

Now interfaces with descrambling devices and commercial stereo processors

... and of course Donley has it



. . also in stock—CADCO, TRIPLE CROWN. LRC, EAGLE, MIRALITE, STARDISH, ELECTRO-HOME, GENSAT, JERROLD, CALIFORNIA AMPLI-FIER, CHAPARRAL, MERRIMAC, BUD, CWY, PHASECOM, COMM/SCOPE, PRODELIN, ICM . . .

Call Bill Simonite, Wally Briscoe or J.D. Thomas

#### Donley International Inc.

distributor of satellite, headend and distribution equipment

5702 D West 34th Street · Houston, Texas 77092 (713) 956-2984

# The Surveyor™ Everybody is talking about it.



### Home Satellite Drive Systems Available from

The Antenna Farm, Apopka, FL 305/886-6999 National Microtech, Grenada, MS, 800/647-6144 Satellite Video Services, Catskill, NY, 518/678-9581 Carolina Satellite Systems, Wilmington, NC, 919/395-1167 Earth Stations of Columbia, Columbia, SC, 803/254-0535 Startech, Salem, VA, 800/221-4656 NEDCO, Toronto, Canada, 416/677-1410

#### **Kent Research Corporation**

1900 Burdett Ave • Troy, New York 12180 518/272-6870

NONOCK . NOTOCK

- ANY TRANSPONDER
- ANY CHANNEL, 2-W
- JUST FLIP A SWITCH

#### **ELECTROHOME SRM36**

SATELLITE RECEIVER/MODULATOR
THE NEW ANSWER FOR HEADEND FLEXIBILITY



DONLEY ALSO STOCKS: • DX • TRIPLE CROWN • CADCO
• NEXUS • JERROLD • ICM • CHAPARRAL • CALIFORNIA
AMPLIFIER • MERRIMAC • AMPLICA • LRC • EAGLE
• COMM/SCOPE • CWY • BUD • MACOM • MIRALITE
• STARDISH • TELPAR . . . AND MORE

CALL BILL SIMONITE . WALLY BRISCOE . J. D. THOMAS

#### Donley International Inc.

distributor of satellite. headend and distribution equipment

5702 D West 34th Street • Houston, Texas 77092 (713) 956-2984



TVRO RECEIVERS/ as far as the eye can see. A total of 5,500 receiver units were scheduled to pass down the line and to USA during November.

"We worked very hard with the downconverter supplier on this" recalls one engineer. "The first solution or attempt at a solution was to turn the receiver 'on' and leave it on. This eliminated the warm-up drift which was causing the customers to find channels only partially tuned in when they turned on the receivers. But that was not the best answer and it caused customer resentment. Next we tried compensating for the drift and that also did not work very well."

As dealers would later find out, the downconverter 'problem' would ultimately figure heavily in the dissolution of the 'partnership' between STS and Luxor. You won't find anyone at Luxor who is willing to discuss, 'for the record,' the state of the Luxor/STS 'squabble' today. Lawsuits continue, and you need to keep in mind that Luxor is a partially 'state-owned' company. STS/Rothbarth is for all practical purposes 'in court' with the Swedish government! An employee of Luxor is an employee of 'the state,' to some extent. It's difficult to get a 'bureaucrat' to go out on a limb, as we all know.

'Off the record' I learned a great deal. One I talked with had been following the industry's publications and noted that STS was not a prominent advertiser in CSD. They found that curious. I tried to explain how Rothbarth had maneuvered himself as the 'power behind the throne' at SPACE and how his large dollar support of SPACE was giving him certain 'privileges' within the trade association. I didn't need to explain my own reporting on SPACE activities earlier in 1984; I found a sympathetic and understanding audience. It had never occurred to them that a manufacturer might withhold advertising support for CSD in protest of our editorial policies. "Perhaps that is all past" one offered. I expressed a hope that it was.

So why was Luxor manufacturing satellite TV receivers, and how dedicated were they to the marketplace?

Luxor management, after the 1979 'crisis' (as they refer to the dark days of re-organization), clearly needed to make some dramatic changes in not only the way the firm operated, but the image and product line of the company. Some products, such as the earlydeveloped 12 GHz TVRO receiver, were waiting in the wings. Others covering carrier-current transmission techniques, energy control systems, micro-computers and automation for home consumer white goods (such as dishwashers) would be developed. The TVRO acceptance caught them by surprise. It also dove-tailed with their own desire to find a new 'marketing hook' for their television receivers. As we investigate separately here in CSD, Luxor has made much of their 'satellite-compatible' TV receivers. The engineering in their current line of home television sets is extremely forward thinking. Costs have been reduced, functions increased, and international standards compatibility increased. It may be the most versatile line of TV receivers in the world today. Every cardboard container shipped (30,000 plus TV receivers a month) from the Motala plant proudly proclaims 'SATEL-LITE TV.

Luxor's designers have integrated the standard TV chassis to its

#### Don't Settle for Less than the Best!

# THE 10-PFM

A mesh antenna of this quality didn't just happen. It took months of research, hard work, testing and retesting. That's because we weren't about to enter the mesh market unless we could offer you and your customers the best. It's with pride that we now introduce the Hastings 10-PFM.

Look at its durable construction. We've achieved surface accuracy without a thousand bothersome steel clips. So the 10-PFM goes together in one third the conventional assembly time. The mesh seams and outer edges are safely and securely covered for a smooth, attractive appearance. And the 10-PFM is built to resist the wear and tear of wind, hail and ice.

#### Check these 10-PFM specifications:

- True polar mount, heavy duty turnbuckle and adjustable offset to ensure usability throughout the continental USA.
- 10' diameter dish with 12 extruded mesh petals, .040 nominal (3003-H14)
- F/D = .375
- Gain at 4GHZ, 40db

Call for dealer information today. 1-800-228-4007 In Nebr. (402) 463-3598

HASTINGS ANTENNA, INC.

847 West 1st, Hastings, NE 68901



Our Model 2350 features 16 programmable satellite locations plus manual override and is easily programmed from the front panel. Dual adjustable end limits, motor stall protection, on-off switch, optional infrared remote control, 125 ft. cable, and the quietest, smooth running 24" jack in the industry make this the best actuator system available today.

-CALL TOLL FREE-

ATV Research

13C & BROADWAY



EMERGING FROM THE DEPTHS OF SPACE An economical commercial modulator for Satellite and MATV industries! \* UHF \* \* VHF \* NEW \* MIDBAND \* OUTPUT OPTION! \* SUPERBAND . . . THE MICRO-VERTER II Sug. list \$80 LAB and FIELD tested over 4 years. Rated for continuous service. Available for ALL CHANNELS 2 through 30 including MID and SUPER! CRISP, HIGH FIDELITY performance. A classic in it's field. Temperature stabilized IC subcarrier circuitry for superior stability. New modulation circuitry for improved performance on critical quartz locked and synchronous detector TV receivers. Built-in dual regulated power supply. Adjustable video and audio levels. Two RF output options: 15 DBmv fixed or 35 DBmv variable (10 to 35). Supported by an excellent nationwide DEALER PROGRAM. OTHER MODULATORS, FILTERS, MONITORS, CAMERAS, ETC AVAILABLE. PHONE or WRITE for COMPLETE VIDEO CATALOG. DEALER INQUIRIES INVITED

DAKOTA CITY, NE. 68731

"Over 20 years of video modulator expertise"

PH: (402) 987-3771

one set of common ingredients; the 'IF' string within the TV. The front end, which selects the input TV channels, is unitized to allow quick installation in the factory or in the field of virtually any tuner frequency range known to man. The 'rear-end,' or the demodulator, is also unitized; any TV 'standard' in the world (SECAM, PAL, etc.) can be outfitted to the system. In effect, they have a **worldwide building-block** ready to be outfitted with regionalized sub-modules for use anywhere. Satellite TV, from this starting point, is simply another set of 'standards.' Luxor literature and advertising makes much of the TV set's ready acceptance of 'satellite TV signals.'

"Our sales have certainly been helped by our 'satellite TV readiness' "notes a marketing type. "People worldwide have heard of satellite TV and it helps us sell our product when we can assure the buyers their new television receiver is 'ready for satellite TV' when they are ready."

Retrofitting a Luxor TV receiver for satellite TV is a matter of sliding the 70 MHz input circuit plus basic demodulator into a planned-for spot inside of the TV cabinet. Powering and audio/video amplification are part of the master chassis. Admittedly, not many have actually been so equipped at this time. Luxor, for example, does not sell TV receivers in North America; not yet. And in Europe, the Russian Gorizont transponder 1- service aside, there is no satellite TV service presently available to consumers. When 12 GHz service **does come** in Europe, the TV receiver cares not whether there is a C band or Ku band 'head' in front of it. In fact, the TV receiver has been planned so that either one OR both could be in front of the TV. And, through the now well known Luxor hand-held remote, the viewer can switch from terrestrial TV to satellite TV, or auxilliary inputs such as videotape or disc without leaving his or her easy chair.

"Someday all television sets will be built this way" smiles a Luxor engineer. "Today, Luxor is the first and to the best of our knowledge the only firm offering this advanced feature."

Impressive. But how does that help the North American TVRO dealer who is still struggling with downconverters (not of Luxor manufacture) which refuse to be temperature stable? We talked with **Bo Lindqvist**, the relatively young man in charge of the Luxor satellite project. Bo is comparable to Steve Birkill in England. He started with microwaves as a young man, through his amateur radio interest. For the 'hams' in the bunch, he once held the 'World Record' in the amateur 23 cm band. Bo has the 'feel' for TVRO of an **American** TVRO engineer; he quickly rattles off the list of American satellites, the sub-carriers found on each, and the reception problems of the various satellites

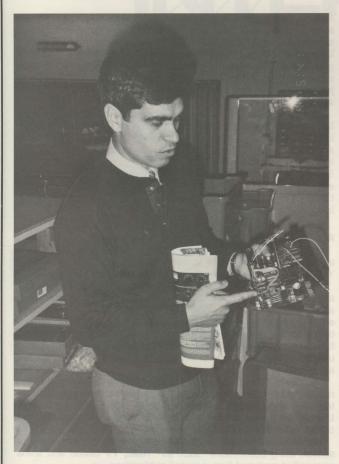
Bo feels the entire industry will, one day and perhaps one day soon, be using the block downconversion technique. The latest Luxor receiver, the **Mark Two**, is Luxor's entry towards this design direction. Bo smiles when you talk about BDC.

"We started with BDC, first" he recalls. "The 70 MHz input, single channel processed system you see in the (original) 1982 receiver was a response to the 1981-82 defacto American 'standard.' I never really liked that approach. The equipment developed in the late 70's was all BDC and had there been an adequate block down-converter available in the U.S. in 1982, we would have introduced that receiving concept (the Mark 2) at that time."

Bo's engineering direction is towards further development and refinement of the BDC technique. New receiver designs now being created reflect this and the Las Vegas show this spring will see the first such units on display. Luxor is naturally sensitive about premature disclosure of their design intentions. As Bo says "We prefer to tell you about it AFTER we do it, not before. There is no advantage to us to tip our hand in advance of having the product ready for delivery."

Would Luxor fall into the same trap as other BDC line suppliers and not properly offer the splitters, line-amps and other 'bits and pieces' required for proper installation of a multi-receiver shared antenna system? Bo again.

"Our present IF choice (950-1450 MHz) reflects our agreement that this has become something of a world-standard for BDC units. I do not like the American use of 450-950 or some slight variation of that frequency range; I believe that ultimately the systems sold using this frequency range will disappear from the marketplace. There are simply too many user-problems in this IF range. However, I must admit that signal distribution parts are more readily available here (400-450 /



TVRO EXPERT/ Bo Lindqvist is the man responsible for the R and D on present 4 and 11/12 GHz equipment lines. Bo dreams of the day when at least one US domestic bird is operational far enough 'east' in the belt to be 'visable' in Sweden.

900-950 MHz). I see that as being only a short-term problem. There will be 950/1450 or even 900-1, 800 MHz distribution parts available."

We wondered when, and from whom.

"At least two firms, one from Japan and another in North America, are presently working with us in this area" he suggests. "I believe there will be more than adequate parts selection for the higher (BDC) IF range before mid-year of 1985.

Luxor, according to Lindy Yngvesson, firm President, has run through the fall selling season averaging around 5,000 TVRO receivers per month off the production line. SAS air shipments to Chicago go out several times per week. Lindy is pleased but bothered by his 'share of market."

"If the total market this fall has been only 30,000 new home systems per month, that translates our market-share to 16.66%. I don't think we have that kind of share. At 35,000 per month, our shipments equate to 14.3% and I don't think we are THAT good either.'

Yngvesson is one of those who believe the total market has been larger than previously reported. He suggests that it may be as large as 50,000 new home systems per month and fixes his share at 10%. (Note: CSD's dealer survey published in July of this year fixed the Luxor market-share in the 8/9% region).

"Perhaps the monitoring system, used to create market totals, has become invalid" he suggests. "Perhaps the distribution system has changed so much during 1984 that it can no longer be measured in traditional ways."

Yngvesson believes that the 'old system' of measuring market activity through the major (so-called Big Ten) distributors may be at fault here. He points out that his firm, Uniden and many others are now using either smaller, more regional distributors or a mixture of the two.

### IN STOCK IN TAMPA **Paraclipse**

16 Foot Antenna

12 Foot Antenna

12 Foot Dark Green Antenna

9 Foot Antenna

**Actuator Rib Mounting Bracket** 

#### CHAPARRAL

Polarotor I and Polarotor II Tune Feed Polarotor I for Paraclipse

HOUSTON TRACKER SYSTEMS **All Models** 

AT-TEC RECEIVERS

R-5000 SP R-7000

Olympiad Sky Eye VIII RECEIVERS

Sky Eye X KLM SSD



California Amplifier Inc 52 dB Gain LNAs

CALL TOLL FREE FOR PRICES

813/876-7677 TELEX: 52-825 1-800-237-2903 1-800-282-7713

PROMAR, INC. 4912 W. LaSalle St. Tampa, Fl. 33607



ATTENTION

#### SATELLITE DISH MANUFACTURERS

We can supply you with reflective aluminum mesh for fiberglass spray up, several molding techniques and skeleton dishes.

Phifer aluminum mesh is ...

- Flexible, easy to use.
- Rust resistant.
- Available in meshes engineered for both 4 and 12 Ghz signals.
- Designed to improve results and cut costs.

Write or call for a computerized comparison of your material or a sample.

Call toll free, 1/800-633-5955

PHIFER WIRE PRODUCTS

P.O. BOX 1700, TUSCALOOSA, ALABAMA 35403

Phifer Wire Products, Inc., 1984

And while the industry is counting receivers and LNAs and antennas at the 'Big Ten' level the smaller distributors have come up suddenly as major movers of specialized equipment. In short, he believes the fall market now about over was indeed larger than many have suggested. If he is correct, it is interesting that a man sitting in an office some 4,500 miles from the heartland of America is **better able to judge** our market size than those who are squarely in the middle of it all.

In this issue of CSD we begin a two-part series which looks at the Luxor design and marketing-support philosophy. Luxor North America's Hans Giner has often stated that the Luxor creed for distributor and dealer support, founded on 'European Business Principles,' differs widely from similar practices in North America. I visited Luxor in Sweden to determine why this might be so and just how those differences appear in the marketplace. I was pleasantly surprised with what I learned on my visit to Motala and believe you will find this series instructive as well.

#### **APPLAUSE Please**

CSD/2 for November 15th reported that three firms have announced their intentions to begin promoting TVRO products in 'national' and 'regional' magazines and newspapers. Good show.

The same issue of CSD/2 allowed me to editorialize on the disappointing sales results this fall for new TVRO hardware and systems, and to warn that if we continue to operate as 30 or 40 or 50 separate entities in the marketplace, we will be many more years realizing our own industry market potential. In other words, individual efforts are fine at some levels; but to the consumer mind we need to present a united 'conceptual picture' of what our hardware does and what we are selling.

R.L. Drake's announcement told us that it was "launching the first national advertising campaign in the history of consumer satellite television targeted at the consumer market." Good, but not quite true. Uniden did it first, starting with Sports Illustrated page-plus four color layouts this past July.

Drake says they are concentrating on the pre-Christmas selling season using publications "such as" **TIME, TV Guide** and some unspecified rural and farm oriented publications.

Winegard Company announced at about the same time they would be using 'regional editions' of PEOPLE (November 26, December 10 and January 7 issues) as well as November 26, December 10 and January 14 issues of Sports Illustrated. They will also be in Playboy in January. Winegard will be in southern, southwestern and southeastern editions for all of these publications.

National Satellite Communications, one of our major distributors with regional offices and warehouses in Orlando (FI) and Clifton Park (NJ) reports they will begin advertising directly to consumers through programming guides and consumer magazines.

There are several good vibrations from all of this. All three, plus Uniden who did it first, are out there trying to create **more walk-in traffic** for TVRO dealers. They will accomplish this by making the public more aware of TVRO, what it does, and what it offers. Drake talks about 100 channels of television 'for under \$2,000' as one example. Drake also talks about how a family subscribing to cable could be spending upwards of \$50 per month, or \$600 per year **for cable** whereas with a home TVRO, they would have their own 'personal cable system' at the end of three years with far more channels for about the same dollars spent.

None of the firms mentioned here have released what their budgets are for this effort. I suspect Drake and Winegard would not have jumped into this activity had the United States Congress not passed legislation clearing the way for legal home TVRO use this past fall. I suspect, and expect, many other firms to be entering the same area of activity as a result of the recent legislation.

But far more important than 'why' they are doing it is 'how' and just whom it will benefit. If Drake talks price in their consumer advertising, that pretty well freezes the dealer handling Drake to a particular price-package. That could cause the dealer some local retailing problems. Drake, by citing price, starts off by declaring 'war on cable TV'; hitting directly at cable charges, and that asks that cable fight back. I'm not sure we are prepared for that battle, **yet.** 

For advertising to benefit dealers, it has to excite people to go to





The Innovators in Satellite Communications

Satellite Video Services

The Northeast's Leading Distributor



(Th)



# Factory Authorized Service Free Dealer Training Seminars Three Stocking Locations

Satellite Video Services, Inc.
RR #1, Box 85-S, Catskill, NY 12414
800-528-DISH
800-831-DISH NY Only
518-678-9581

Satellite Video Services NH, Inc. RFD #2, Harriman Hill Rd., Raymond, NH 03077 603-895-3182 Satellite Video Services PA, Inc. 317 E. Pleasant Valley Blvd., Altoona, PA 16602 800-242-3860 PA Only 814-942-5003

Prodelin • M/A Com • Luxor • Uniden • Conifer • Winegard • Gensat • Draco • Omni Spectra • Wilson



#### **Use Your Wireless** Control FROM ANY ROOM!!!

Works with most infrared remote control receivers.



#### LIKE HAVING A SATELLITE RECEIVER, VCR. CABLE TV. AND VIDEO DISC IN EVERY ROOM!

- Remote-control Satellite Receiver, VCR, Cable TV and Video Disc can now be used long-distance.
- Install on any TV to access all your remote control video components.
- Makes non-remote TVs remote controllable with remote control VCR, Cable Selector, or Satellite Receiver
- No fancy wiring needed: uses existing coaxial wiring between TVs.
- No extra controls to buy! Uses the hand-held remote controllers you already have
- No tools required. Easily installed in minutes



MODEL 170





\$79.95

Dealer One \$49.00 Dealer Five \$46.00 Dealer Twenty \$42.00

608-493-2291

**MERRIMAC** 





EASPACE





Weather-proof Housing. Installs in minutes to Chaparral™ Polarotors. Constructed of light-weight, rugged ABS plastic for verse of minutenance. ears of maintenance free protection

FOR MORE

NATIONAL TOLL FREE: 800-558-5582

WISCONSIN TOLL FREE: 800-242-2290

GRAF CABLE: DELTA SAT 414-375-1000

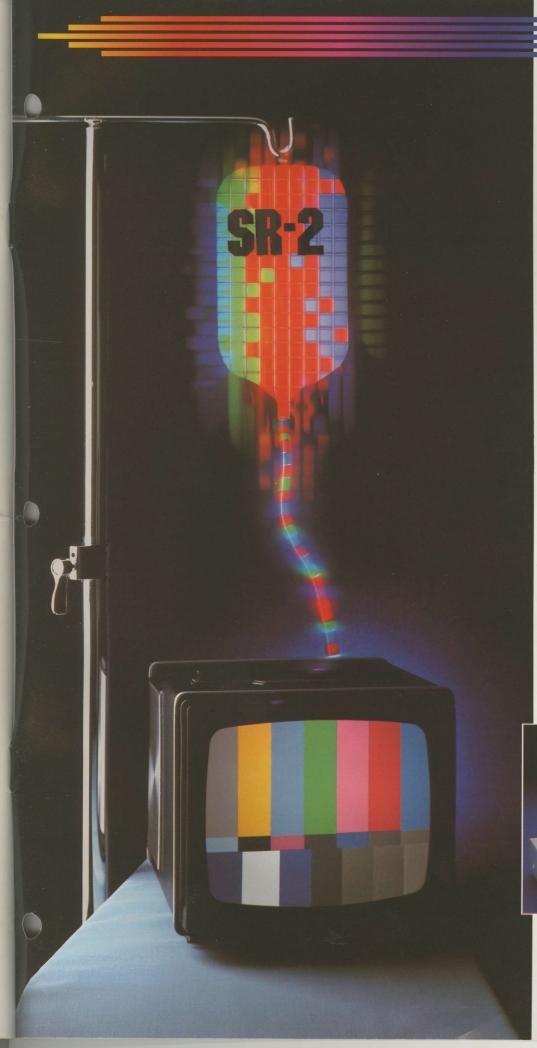


DRAKE in TIME/ for October 28th. Inspite of press releases to industry suggesting that Drake was going to 'key off of' comparison between cable and private TVRO use/ownership pricing differences, first shot largely extols virtues of TVRO for rural residents. Dealers should note that advertisement refers readers to 'yellow pages' for listing of 'nearest R.L. Drake satellite dealer.' Is it too late for dealers to change their yellow page listings?

their nearest TVRO dealer to look at hardware and systems. If Winegard advertising in Playboy gets people into TVRO stores, much of the traffic will end up going to stores that don't sell Winegard equipment. That is a calculated cost of any effort like this.

Somebody, certainly, had to take the lead in this and Uniden, Drake, Winegard and National Satellite Communications are to be commended by everyone of us for spending dollars in this fashion. We will all benefit, directly, shortly. At the same time, it also makes excellent sense for another ten or twenty firms to jump into the same activity and then for all of the firms who have adopted national consumer advertising programs to sit down at one time in one room and re-distribute their consumer advertising dollars so that each ends up contributing some share to a national, all-industry, consumer awareness program. If everyone is going to benefit, everyone should be paying into the same pot. That's idealistic, of course, but certainly the majority of these firms who plan such advertising can get together and agree to support an all-industry consumer awareness program during 1985.

Getting 'legal' was the important first-step. Getting into the consumer mind is an important second-step. Now, getting together to get into the consumer mind is the next step. Dealers can help make this happen, to the benefit of every dealer, by continually asking their suppliers 'when are you going to all get together and promote TVRO as a concept?'. If the dealers will put the pressure on the OEMs and distributors, we'll see some amazing growth in consumer awareness (and system sales) during 1985!



# The SR-2. Advanced therapy for a healthier picture.

Your customers want a proven prescription for a crisp, clear picture with distortion-free audio. Now you can give it to them with the new second generation SR-2 Receiver System. It's the breakthrough Rx.

The SR-2 contains a break-through ingredient we call LPLL, the Linear-Phase Lock-Loop Circuit. In the past, LPLL has been found only in commercial electronics. But now, LPLL is the key in providing the video demodulation necessary for a brilliantly healthy picture, noise remission and improved threshold performance.

The SR-2 also relieves other annoying reception symptoms your customers may experience. Our Automatic Video-Gain Control maintains consistent picture brightness no matter what transponder is selected. And the Priority Polarity Control provides maximum signal strength.

For happy customers with a healthy outlook on satellite reception, give a dose of the SR-2. It's a totally integrated electronics package, including remote control that's user friendly in operation and installation.

To give the SR-2 your own personal examination, call us today at (800) 328-7733. In Minnesota, (218) 681-5616.



UNITED SATELLITE SYSTEMS



St. Hilaire, Minnesota 56754



#### **SAT-TEC TVRO SYSTEMS**

dollar for dollar, performance for performance, you couldn't offer your customers a better system

Performance is built into the chassis of SAT-TEC components, not the panel. We could modify the panel to look more impressive. But that's not the way to get the results your customers want. So we put the quality they demand on the inside.

And SAT-TEC components get results. The R-5000 receiver delivers unexcelled picture quality. The S-5000 stereo demodulator provides dynamic stereo reception

SAT-TEC performance is backed up by reliability ensured in extensive quality control that includes unique triple level board tests; receiver burn-in; and final, on-the-air checks.

At SAT-TEC, we've pioneered improvements in satellite technology to develop advanced systems incorporating tomorrow's features for today's market. Because videophiles are far and few, we've targeted our TVRO systems to satisfy the broader spectrum of the market—the group that wants

maximum performance at reasonable prices.

What's more, versatile SAT-TEC components are compatible with other related equipment, so you can put together economical TVRO packages that don't stint on performance. Your "do-it-yourself" customers will welcome our current limited fool-proof hook-up, too.

Dealers who know us have used our products more than any other in making up TVRO packages. You just couldn't sell a better TVRO system. So when you're looking for satellite TV systems, choose SAT-TEC. SAT-TEC quality can be seen.

For more information, contact your nearest SAT-TEC distributor.



SAT-TEC SALES INC. 2575 BAIRD RD. PENFIELD, N.Y. 14526 TELEPHONE 716-586-3950 TELEX 466735 RAMSEY CI

SAT-TEC DISTRIBUTORS: CVS SYSTEMS, Marion, IN, 317-662-0037 • LEWIS CON, CO., Humboldt, TN, 901-784-5070 • SATCO USA, New Philadelphia, OH, 216-339-7779 • SATELLITE RECEIVERS, Green Bay, WI, 414-432-5777 • SATELLITE SALES, Cleveland, OH, 216-461-0000 • SATELLITE TV SYSTEMS, Clemson, SC, 803-654-5569 • STAR COM, Big Spring, TX, 915-263-1012 • WARREN SUPPLY, Sioux Falls, SD, 605-336-1830 • AV ELECTRONICS, Great Falls, MT, 406-761-3283 (800-548-9950) • ECHOSPHERE, Englewood, CO, 303-935-1909 • ECHOSPHERE, Sacramento, CA, 916-381-5084 • NATIONAL SATELLITE, Latham, NY, 518-783-0088 CANADIAN DISTRIBUTORS: SATELLITE CANADA, Weston, Ont., 416-475-2266 • C.A.L.E., Regina, Sask., 306-527-0424.